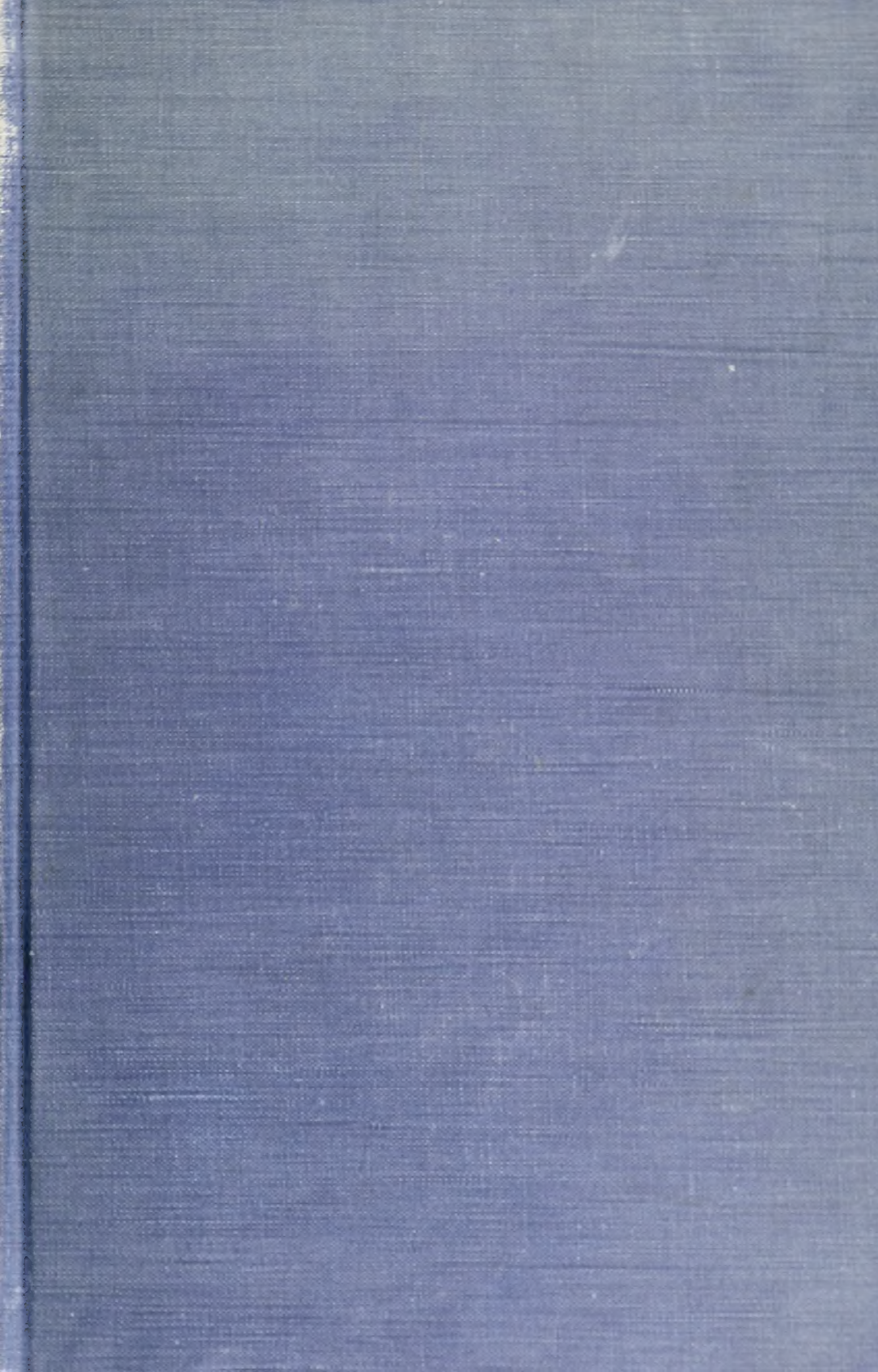
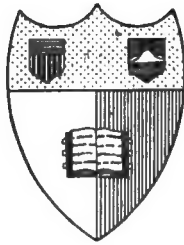






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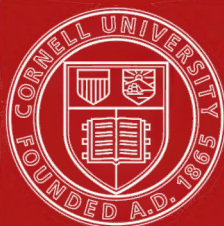
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THE MEDICAL DEPARTMENT OF
THE UNITED STATES ARMY
IN THE CIVIL WAR

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TABLE OF CONTENTS.

- I. Preface;
- II. The Battle of Bull Run;
- III. Pope's Virginia Campaign;
- IV. Evolution of the Ambulance Corps and Field Hospital;
- V. The Bloodiest Day in American History—Antietam;
- VI. The Battle of Fredericksburg;
- VII. High Tide of the Confederacy—Gettysburg;
- VIII. The Great Battle of the West—Chickamauga;
- IX. The Battle of the Wilderness;
- X. When Sherman Marched Down to the Sea.

PREFACE.

The story of the part played in our great Civil War by the Medical Department of the Army has never been told in an adequate manner.

Histories of regiments, brigades, and armies; memoirs of privates, subordinates, and generals fill our libraries; the innumerable records of the rebellion give the last details of the battles lost and won. The leaders in that great struggle have fought again their battles until their lips were turned to dust. On the great fields of conflict a thousand shafts tell where batteries stood and battle lines held their ground amid the cannons' thunder.

The work of the surgeons alone remains unrecorded. Excepting what lies embalmed in those cyclopean volumes, the Medical and Surgical History of the Rebellion, no one has set down the modest story of their unselfish labors. Surgeon Henry E. Brown wrote a brief official history of the Medical Department of the Army some years ago. It has that arid, unreadable quality so common in public documents, and is very unsatisfactory.

In selecting from the medical records of the war, scattered in bits through hundreds of volumes, I have endeavored to sift out that having true historic value. As I understand that term, records have historic value only, and in proportion, as they may be applied to a solution of the problems of today. So in writing I have had a double object: first, to present the achievements of the medical officers of the army in the great war; second, to make the narrative of value to medical men of the army today.

This history should have been written by one who could tell it first hand; one who had been imbued with and retained the spirit of the war; who could say, like Aeneas, *quorum omnia vidi et pars fui*, as Morris Schaff has written of the army of the Potomac. Woodhull has given us a chapter on the last campaign which causes regret that he did not write it all. No one has done the whole and the time is all but past.

Burke was wont to condemn the proneness with which men, when confronted with a difficult problem, consult their own in-

vention rather than the experience of the past. Rightly considered, both are extremely useful and together they are the principal factors in progress.

By studying the past history of any line of human action, we learn what measures were successful, and just as important, what failed.

Invention adapts successful measures to present conditions, and, when experience fails, discovers new ones, to be in turn submitted to the test of experience.

The history of the Medical Department of the United States Army during our great Civil War is particularly rich and valuable in experience that may be applied to the tactical problems of sanitary troops today. It may be safely said that sanitary tactics of the battlefield did not exist in the period immediately preceding the war.

A steady evolution in this work progressed, from the pitiful absence of provisions for the wounded at Bull Run, to the splendid organization and work of the Medical Department in the great closing campaigns of the war. The system of caring for the wounded, devised by Letterman and carried out by McParlin and others, was the basis of all systems now in use in the great armies of the world. More than that, and contrary to the common opinion, this system was developed by the spring of 1864 to a point which left little to be desired, and which more modern devices have not materially changed. The ambulance and field hospital organization that crossed the Rapidan with Grant's Army was in all essential features the ambulance and field hospital organization that would take the field in the event of war tomorrow; and we shall be extremely fortunate if we have an equipment even approaching that of the Army of the Potomac at that time. We did not have anything like it in 1898.

Students of military science have studied all the great battles, not only of the Civil War but of all wars of recent and even of ancient times. Napoleon's campaigns have been dissected to the last detail; Marlborough has afforded valuable lessons; Caesar and Hannibal are not too ancient for profitable study by the line officer. The tactics of sanitary troops appear to me no less worthy of study.

If changed conditions have not rendered the campaigns of Napoleon useless to the line student, surely they have not done so with the campaigns of the Civil War for students of sanitary tactics.

How the Medical Department of the Army was developed from an unorganized collection of surgeons at Bull Run into a splendid, reliable, and efficient machine in 1864 I shall attempt to relate. If the narrative proves less interesting to the reader than was its unearthing from the fading records of the war to me, the fault lies with the narrator, not with the subject. Napier's well-known lines on his epic of the Peninsular War might well be quoted. The theme—the creation of a system of care for the victims of war—is worthy a more facile pen than mine.

(Signed) LOUIS C. DUNCAN.

THE BATTLE OF BULL RUN.

AT the outbreak of the Civil War there was in the United States Army neither plan, personnel, nor equipment for collecting the wounded from the battlefield; caring for them in hospital; or transporting them to the rear. The Army was small and, strange as it may seem, war was not anticipated. Even had it been expected, the case would have been little different, for at that time no nation had ambulance corps or field hospitals. They had not yet arrived. It seems that armies were then more illy provided in that regard than in the time of the First Napoleon, or even earlier. It was customary to extemporize crude hospitals or churches, mills, barns, and other unsuitable buildings in the rear of the lines. The first tent hospital in a pitched battle is said to have been used at Shiloh, where Surgeon Irwin took possession of a regimental camp that had been abandoned and converted it into a hospital.

This was no more a real field hospital than was the tent hospital provided by Isabella at the Siege of Antequera, four hundred years earlier. The real distinctive quality of a field hospital is mobility.

Larrey organized real field hospitals for the Grand Army. Still earlier the Army of King William in Ireland, the army that fought the Battle of the Boyne, had a fairly complete system of hospitals; including base hospitals, evacuation hospital, and marching (field) hospital.

This was in 1691. But the memory of these things had perished. Although the Army in 1861 had nothing like our modern field hospital, each regiment had a small hospital, provided with three hospital tents and certain supplies. Hospital corps there was none, but it seems each regiment had a hospital steward.

There was no ambulance corps whatever. Indeed ambulances, although used by Larrey fifty years earlier, had not been adopted by the United States Army. No ambulances were used in the Mexican War, or in the later Indian campaigns on the plains. In 1859 a board of medical officers examined a number of ambulances and recommended that two be tried; but they had not been adopted. Yet ambulances suddenly sprung into existence and

were used in the first campaigns of the war. The States and public spirited citizens were more progressive in this matter than the Army. These ambulances were, however, attached to regiments only.

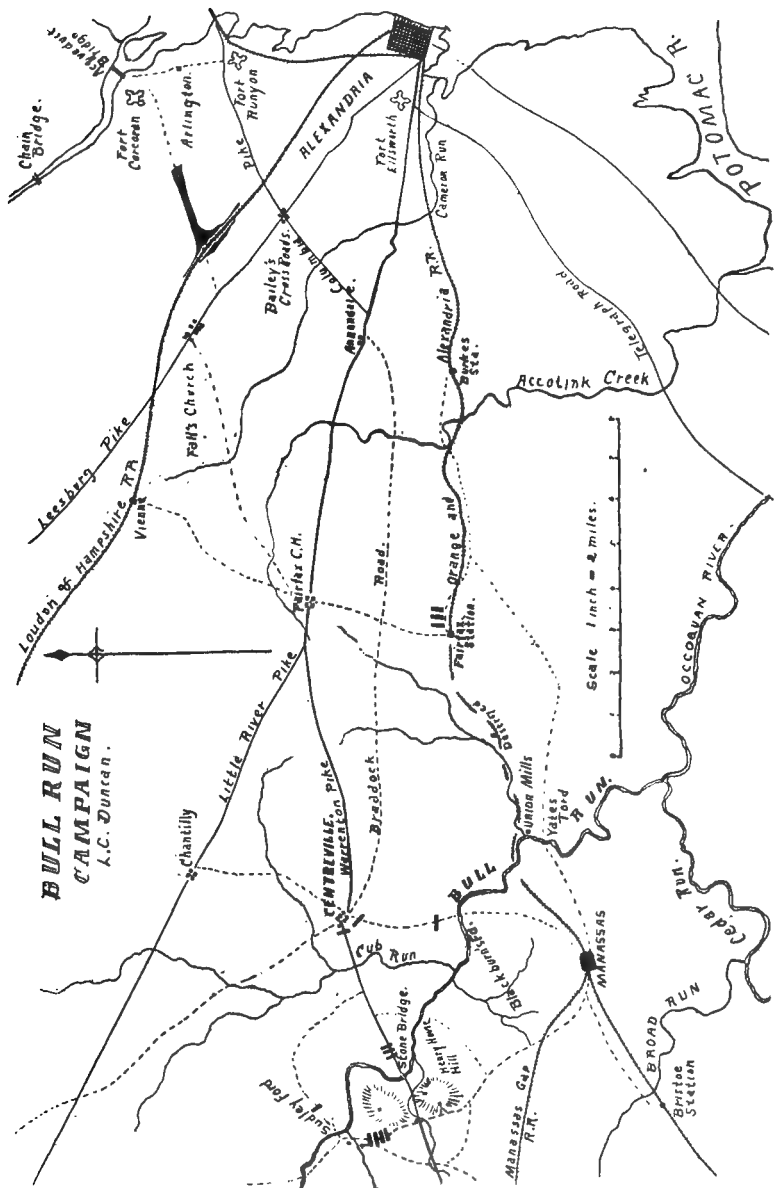
The Surgeon General of Pennsylvania offered to furnish a complete ambulance company (2 officers, 67 men, and 45 ambulances) for service with the Pennsylvania Reserves; but the Secretary of War took no notice of the offer. This was as late as September, 1861. Surgeon Tripler, a little later, when another similar offer was made, reported that all necessary and practical arrangements for care of the wounded had been made, when no real adequate arrangements had been made at all. They were not made until Letterman became Medical Director of the Army of the Potomac, July 1st, 1862. The miserable state of the wounded after Second Bull Run shows what arrangements had not been made up to August, 1862. Ambulance corps and field hospitals were only partially organized at Antietam, and were not complete until nearly three years of war had passed.

Although ambulance corps and field hospitals had been used earlier, in our Civil War they were begun anew and went through a course of evolution as though they had had no previous existence. It took one year to develop the plans and two years more to put them in complete operation.

MEDICAL EQUIPMENT AND PREPARATION.

General McDowell's army numbered about 35,000 men, organized in five divisions; two of which took no part in the engagement. It is not speaking exactly to say it was organized. It was not really organized and was an army in name only. The Medical Department was even more incomplete and inexperienced than the balance of the Army, which is saying a great deal. The Medical Director of the Army was Surgeon W. S. King, U. S. Army, with the rank of major. In his report he complains bitterly of his lack of rank, and authority to enforce his recommendations. He seems to have had no conception of the duties of the chief medical officer of an army. He had an assistant, Assistant Surgeon Magruder, U. S. Army. Serving with the regular regiments there were several young assistant surgeons of the Regular Army, among them George M. Sternberg.

3



Surgeon King says there were a few ambulances which were distributed equitably among the regiments. It seems that there were enough for one to each regiment of 600 to 800 men. An estimate was made for twenty wagons to carry the medical supplies of the army. This estimate was approved by the General but the wagons never came. Each regiment had some sort of a small regimental hospital; these were the only field hospitals with the army.

To make matters worse, a few days before the movement began, orders were issued to put the army in light marching order, all baggage and stores of every kind were left behind. This made it impossible to carry any medical supplies except what could be carried on the ambulances and field wagons. It looks impossible, but the same thing occurred again in 1898. But three ambulances were taken to Santiago.

A sample regimental equipment was that of the First Connecticut Volunteers, 600 to 700 men. This regiment had one two-horse ambulance and two wall tents for hospital use; no hospital supplies and apparently no litters. There were no men to use this equipment except the band men.

Some regiments probably had more than this, some not so much. And this was the medical equipment of an army marching out to immediate battle. The railroad base of the campaign was at Alexandria; on the day the troops marched Chief Surgeon King sent an officer to Alexandria to prepare a base hospital there. The railway was open to Fairfax Station, about twelve miles from Bull Run. The Army marched by the railway and parallel roads a few miles north.

The army left Arlington and Alexandria on the 16th and reached Centreville on the 18th. On that evening there was a skirmish near Blackburn's Ford in which several were killed and some forty wounded. The Medical Director's impressions of this little affair are interesting. He says, "We pursued our course on the road leading to the Ford and soon met the ambulances with the dead, wounded, and disabled men. One soldier had his face shot completely away; some were disabled by sun-stroke and exhaustion. The ambulances were stained with blood. * * * I despatched Assistant Surgeon Magruder to Centreville to select suitable buildings for hospital purposes.

A hotel, a church, and a large dwelling were selected. An unexpected difficulty was the great scarcity of water. There were few wells in Centreville and these had been so exhausted by our thirsty men that they were nearly all dry. Water, procured with great difficulty, and placed in basins for washing the wounded, was snatched up and drunk by stragglers as they passed, before they could be prevented." The Medical Director also saw with astonishment that a hospital established by some regiment, refused to receive certain wounded men because they belonged to other regiments. The less severely wounded were sent back to Washington. The more severely wounded were kept at Centreville, where they were captured on the 22nd.

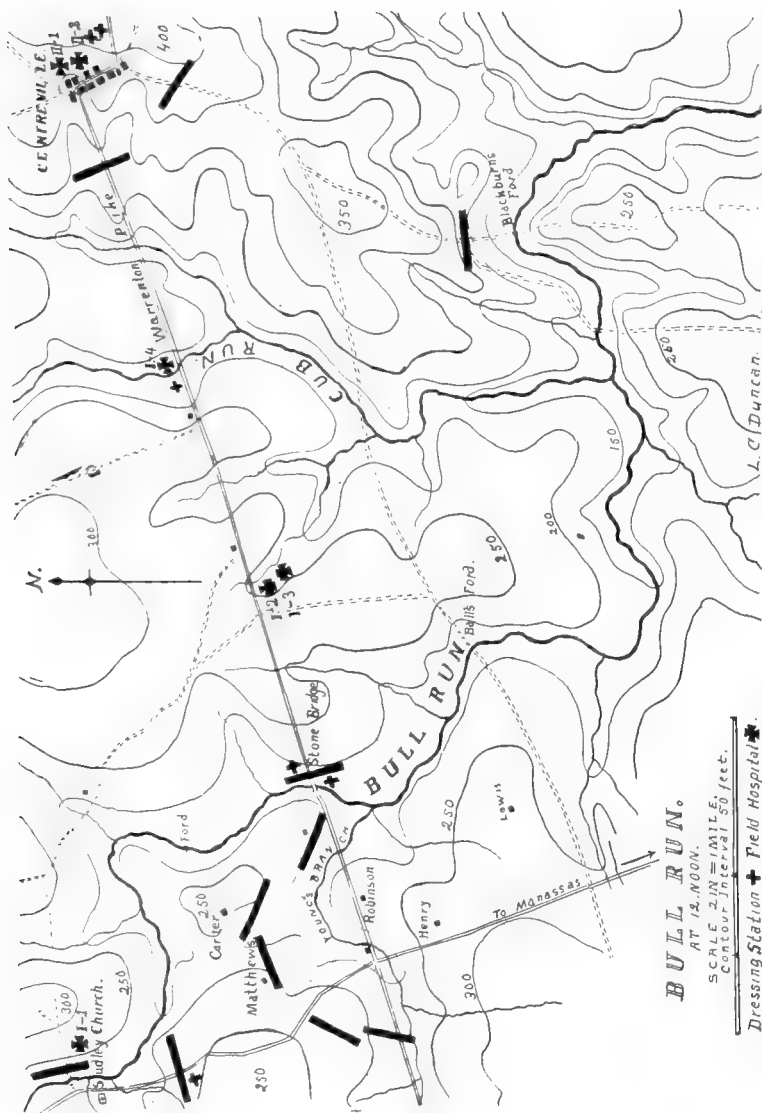
While the Army was here, two whole days, although the enemy was posted behind Bull Run but a few miles away, and a battle was confidently expected, no hospital arrangements were made in Centreville; no plan was made for transporting the wounded; everything was left to take care of itself, haphazard. The Medical Director telegraphed the Surgeon General for supplies for the approaching battle. The Surgeon General replied that they would be forwarded to Fairfax Station the following day, but they never came. It was not supplies, however, that were needed primarily; it was plans and organization. Had the supplies reached Fairfax Station they would have availed little or nothing.

THE BATTLE.

While it is not within the scope of this article to give a complete description of the battle, a brief review of its principal features is necessary to a good understanding of the efforts of the medical department and its success or failure.

The Battle of Bull Run was a political battle, forced on General McDowell by the politicians, before he was prepared and against his judgment.

He had an aggregation of about 35,000 men loosely organized in seven divisions. His force was largely composed of volunteers. The few militia regiments were inferior to our Guard regiments of today, while the volunteers, both men and officers, were entirely without experience in war, or even in peace training. The only reliable troops in the whole force were the eight



companies of regular infantry under Major Sykes. The seven regular batteries seem to have been poorly handled and the few troops of regular cavalry had little or no influence on the contest. There was also a battalion of marines, but they were recruits and ran as fast as the volunteers. There were about 28 regiments engaged, most of which were from the eastern states. The average length of service of all the regiments was only sixty days.

The morale seems to have been on the side of the Confederates, who were spoiling for a fight. That the Northern troops were not quite so eager is shown by the action of a regiment of which the term of enlistment expired on the day of the battle. Despite the entreaties of the General this regiment marched to the rear to the sound of the guns opening the fight along Bull Run. A more craven action is not recorded in the whole war.

The plan of the battle was masterful and should have been crowned with success. The execution was faulty.

Of the five divisions of the army one was left behind to guard the railroad, which had been destroyed as far east as Fairfax Station. This division may be dismissed. Miles' Division was left at Centreville, with one of Tyler's brigades. This reserve was never brought forward, thus leaving almost half the army out of the battle.

Tyler's Division was still as large as the other divisions, having three brigades left. This Division with those of Hunter and Heintzelman was to fight the battle. The plan was for Hunter and Heintzelman to make a wide flanking movement by the upper fords and fall on the enemy's left, while Tyler was to march straight ahead by the Warrenton Pike, and, when the Stone Bridge should be uncovered, cross and join the left of the main attack.

Everything being in readiness, orders were issued on the 20th. The troops marched out to battle at 2 o'clock on the morning of the 21st, a decidedly early hour, at which time, on the evidence of so good an authority as Napoleon, the physical powers and moral courage are at their lowest. The left wing, though having the shortest distance to go, marched first. The troops of the right wing were delayed by Tyler's column and did not get started until 2.30. They had eight miles to march and did not pass Sudley's Ford till long after daylight. The weather was very warm,

the roads were dusty, the pace was too fast, and these civilian soldiers were nearly exhausted when they reached the field. However, they crossed the Run and advanced along the Manassas Road until they met the enemy a half mile south of Catharpin Run. Howard's brigade was left behind to guard the Ford. The column was deployed about nine and the enemy gradually forced back. Burnside, who made the first attack, soon retired from the contest and his brigade did not again return to it.

Meanwhile Tyler had reached the Stone Bridge long before; his first gun was fired at 5.30. Sherman, who commanded one of his brigades, found a ford above the bridge, led his troops across, and joined in the fight with much resolution. Keyes also crossed but kept his brigade in a friendly ravine. Schenck did not cross at all.

All went well with McDowell. The enemy was driven back from one position after another until about 2 o'clock he was forced across the Warrenton Pike. The Stone Bridge was now open but no reinforcements were brought across. Howard was finally brought up, however, and the five brigades of Porter, Willcox, Franklin, Sherman, and Howard were formed for the decisive attack on the Confederates, strongly posted on the Henry House Hill.

The struggle for this small plateau was the decisive action. The Union forces had some success, but toward 4, Confederate reinforcements arrived from the Shenandoah Valley and, joining the left, flanked the Union right.

The inexperienced Union troops, exhausted by more than twelve hours of marching and fighting, lost courage and retired from the field; each column retreating by the road it had followed in the morning. There was no efficient pursuit and the retreat did not become a rout till Bull Run was past. Both retreating columns came together west of Cub Run and the whole army had to defile over one small bridge. Cub Run is an insignificant stream, but it might as well have been a broad river, in so far as all vehicles were concerned. By this time the Confederates had sent some troops of cavalry and a light battery in pursuit. A few well planted shells on the Cub Run Bridge blocked it and all ambulances, wagons, carriages, and even guns not past this point were lost, together with a number of pris-

oners, wounded and otherwise. A whole battery, which had gotten thus far safely, was lost. Another battery which had been with Richardson, near Blackburn's Ford, and had not been across the Run, was stampeded and all its guns and caissons lost. It is difficult to believe that the regulars of these two batteries were not panic stricken as well as the volunteers.

The regular infantry maintained its organization and behaved admirably throughout the whole retreat. The marines were entirely new recruits, and in spite of the efforts of their officers, broke and fled, in confusion.

An attempt was made to rally the fleeing troops at Centreville that night and Miles' division made a brief stand, but they could not be depended on. The whole army was panic stricken and fled in the greatest disorder, never stopping till the Potomac was reached. Next day there was little or no organization left.

This retreat in panic from the field would have made the medical problem difficult for the most efficient medical department; as it was medical aid and care for the wounded was annihilated. They were left to their own devices.

CARE OF THE WOUNDED.

On the morning of July 21st the Army, or a part of it, marched out to battle. The two divisions of Hunter and Heintzleman made a turning movement to the right, crossed Bull Run at Sudley Ford and advanced along the road to Manassas.

When this column uncovered the Stone Bridge, Tyler was to have advanced by the Warrenton Pike, making the secondary attack. Of his three remaining brigades Sherman's crossed at a ford above the bridge and took an important part in the contest: Keyes' brigade also crossed but kept in the safe cover of friendly ravines. Schenck exercised even greater discretion, he did not cross at all. Ambulances followed the main column; as the accompanying batteries were unable to cross with Sherman and Keyes, I take it that the ambulances were also unable to cross.

The troops that actually crossed the river and took some part in the conflict were the seven brigades of Porter, Burnside, Franklin, Willcox, Howard, Sherman, and Keyes; numbering with five batteries and a few troops of cavalry, about 18,500

men. The brigades averaged four regiments each; there being 28 regiments of less than 700 men. The force engaged approximated a modern division; with another division in the rear. There should have been eight field hospitals and the same number of ambulance companies. Of these six would have been in the neighborhood of Centreville.

These six could have cared for the seriously wounded (transportable) of the battle—about 800. Just how many ambulances were with the army no one knows. It seems probable that there were as many as 48, but there was no organization.

Each regiment had one or more medical officers, who followed closely behind the lines. These officers attended the wounded on the field, removed them in ambulances, or, when that was impossible, collected them in buildings, the shade of trees, or in other protected places. All the evidence at hand shows that these men worked faithfully to the last, and a number volunteered to remain with the wounded where they became prisoners of war. But the work was individual, every man for himself, and small results were to be expected. There was regimental aid, nothing more.

The Medical Director accompanied the General throughout the day, galloping here and there about the field, but exercising no sort of control, or even supervision over the collection and care of the wounded.

In fact he followed the example of the General, who personally exhorted and led small bodies of troops instead of commanding the army. The Medical Director carried instruments and dressings in his saddle bags and treated a number of men on the field; among others General Heintzleman, for whom he extracted a bullet, while the General sat on his horse.

Accompanying the flanking column, he noticed that the day was very warm and the men were exhausting themselves by running, which he deprecated to the General. He thought there would be a brisk skirmish and the enemy would fall back; so he took out his note book and pencil and began to make a list of the dead and wounded.

He relates that he counted more than a hundred dead before seeing one wounded man. This indicates that the wounded got away in some manner. But the enemy did not fall back so

obligingly and he gave up his task of counting. Being at length forced to believe that a real fight was at hand he sent Asst. Surgeon Magruder to Sudley Church to "Prepare it, and if necessary a couple of houses close to the church for the reception of our wounded; and to send forward the ambulances as soon as possible." This was the only field hospital established that day. It is true that the wounded made their way to various houses, but that was casual. To the Sudley Church hospital were brought some 300 of the 1,124 men wounded in the battle. As the ambulances had no place else to which to carry the wounded they unloaded them there. A number of surgeons gathered at the church casually and the wounded were cared for in some way until the place was captured in the evening.

Surgeon Magruder says, "Upon taking possession of the stone church I set men to work removing the seats, had the floor covered with blankets, buckets of water brought, instruments and dressings in place, operating tables improvised, and sent men to the nearby fields to procure hay for bedding. In about two hours the church was filled and I was obliged to take possession of three other buildings. As soon as I could get them cleaned out wounded men were carried into them until they were also filled. For want of other buildings many of the wounded were laid under the trees in the grove around the church. Several capital operations were performed before the rush of the retreating columns crowded the hospitals so completely that work for the time being was suspended."

Except these wounded near Sudley Ford none appears to have been removed from the field by ambulances. Some probably made their way back across Bull Run and were picked up there. All those who fell in the last struggle for the Henry House Hill were left on the field unless able to get away by their own efforts. Assistant Surgeon Gray, who was with the regular cavalry, says, "Few ambulances could come up and our attentions consisted chiefly in conveying the injured men into the shade, giving them water, extracting balls, and &." Assistant Surgeon DeGraw, of the Eighth New York, says in his report, "In following the regiment to the field I entered a thicket in which lay a large number of wounded with only one surgeon attending them." He stopped to assist. These wounded were later taken to the church and he also went there.

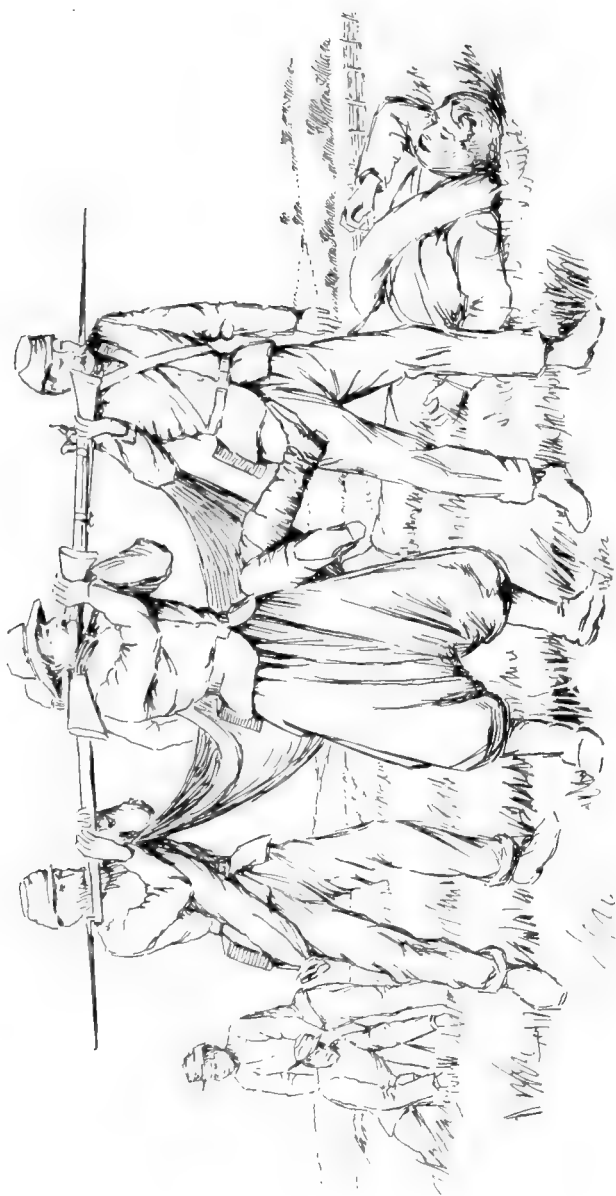


Two-wheel Ambulances, used in 1861.

The Surgeon of the Fifth Massachusetts, W. W. Keen, Jr., states that the drum corps of his regiment was with the ambulances in the field, and this was the only detail of men for hospital purposes. Surgeon Stearns of the First Connecticut says, "After the regiment had advanced about one mile I selected a house to be used as a hospital and hoisted the hospital flag; I gave orders to the musicians of the band, who had been detailed for that purpose, to follow the regiment and bring the wounded to the hospital. Water was abundant but we had no soups and no food except such as was in the haversacks. The wounded of other regiments were generally borne on blankets fastened to poles. The wounded of my regiment were so slightly injured that they walked from the field." The First Connecticut belonged to Keyes' Brigade which was so safely manoeuvred; the regiment had no killed and eight wounded, presumably slightly.

Assistant Surgeon John W. Foye of the Eleventh Massachusetts, made a report later, throwing a little light on the battle. He says, "The regiment was accompanied by one ambulance well provided with stimulants and surgical appliances, but without medicines or tents. The field hospital was established about a quarter of a mile from the front line when we engaged, but late in the day it was three-quarters of a mile in the rear. Up to two o'clock the Confederate wounded at the hospital nearly equaled our own. Until that time but few wounded were brought off by their comrades, but later it was not unusual to find a flesh wound escorted by half a dozen able men; it is needless to say they did not return to the field. * * * At three a medical officer of rank visited the hospital on his way to the rear and left it optional with the medical officers at the hospital to join him or remain. Nearly all the surgeons left us about half-past three. Three ambulances went away at that time. The only remaining ambulance, belonging to my regiment, was captured about half-past five, within a hundred yards of the hospital.

All the wounded capable of being moved had been sent off to the rear. I estimate the number left at one hundred and eighty. All of them fell into the hands of the enemy. I saw no excisions. The major amputations, four in number, were by the circular method." This regiment, numbering seven hundred and fifty men, had thirteen killed and forty-five wounded.



When the Union troops fled from the field at four o'clock the wounded who had not made their way to the rear were left scattered over the whole terrain. Some had been gathered in the few houses and barns; there were thirty-six in the Matthews House; others were in ravines, groves, and thickets; many of the severely wounded lay where they fell. Some had temporary aid, many had none. It must not be thought, however, that the whole 1,100 wounded lay on the field. All who could possibly get to the rear did so and the number of wounded that reached Washington was astonishing.

Ambulances were sent out next day to pick them up and it is probable that one-half of all the wounded got away from the field and reached the lines at Arlington. The Confederate reports show 550 wounded sent to Richmond as prisoners.

When the retreating column passed Sudley Church the Medical Director made no provision for the abandoned wounded. There was some debate among the regimental surgeons there but to their honor a number volunteered to remain with the men entrusted to their care. The Geneva Articles were not then in force and they ran the risk of being made prisoners. Those who remained were Asst. Surgeons Sternberg and Gray of the Regular Army, Swift, Winston, and DeGraw of the Eighth New York, and Homiston and Swalm of the Fourteenth New York. This was about five o'clock.

Meanwhile the column hurried on toward Washington. A small force of regulars covered the rear. The Medical Director naively remarks of the retreat, "I may say it was one of the most unpleasant marches of the campaign." He accompanied the General but lost him in the confusion of the night. Next morning he "hastened" forwards to Washington to see about the supplies that never came. The officers that remained at Sudley Church were made prisoners. The Confederate officers would not listen to their claim that they had remained behind to care for the wounded voluntarily and were entitled to immunity from capture. Next day they were taken to Manassas, leaving the wounded without aid, but were allowed to return again to care for them. On the morning of the 22nd a cold rain began and the wounded were in miserable plight.

Surgeon Gray says that they collected as many as possible in

the Lewis House and outbuildings which were soon packed with Union and Confederate wounded, many still remaining on the field. There were no instruments, food, or blankets. The wounded were gradually removed to Manassas in wagons, and from there to Richmond by train. The last load left the field on July 28th, just one week after the battle. The wounded were transported in rough wagons and on reaching Manassas were placed in freight cars, on the bare floor. They were from one to two days on the road: neither food, water, nor medicines were provided for the trip.

All this was of course not intentional but due to lack of experience and preparation. The Confederate wounded were doubtless treated in the same way.

Surgeon Gray was sent from Richmond to Charleston, Columbia, and Salisbury, and was only released on July 28th, 1862.

Asst. Surgeon Sternberg was more fortunate. He says, "A number of capital operations were performed at the church but owing to the want of food and stimulants and unfavorable circumstances most of the cases terminated unfavorably within twenty-four hours. On the following morning a cold rain began and continued almost without interruption for two days. The church would not hold all our wounded and many were lying in front of it. We made a frame about twenty by thirty feet and covered it with rubber blankets, a great number of which had been left on the road. * * * On Monday a small quantity of corn meal was obtained from a nearby house and some gruel made. A cup of this was given to nearly every man and this was all the food we were able to obtain for them until Monday evening, when all the medical officers were taken from Sudley Church to Manassas. On Thursday all but three of our number took a parole not to serve again during the war. Those of us who refused to take the parole were shortly after allowed to go out and attend to our wounded, on giving a parole not to attempt to escape for five days. * * * On July 25th I was sent to Centreville, where I found a number of men wounded in the affair at Blackburn's Ford. They were all doing well. On Sunday, my parole having expired, I made my escape from Centreville and after a tedious tramp, arrived in Washington the following Tuesday, footsore and weary."

Surgeon DeGraw relates how scarce food was at Sudley Church Hospital at first. But soon the surrounding inhabitants brought in soup, chickens, eggs, milk, butter, etc., so that there was sufficient.

Assistant Surgeon Charles R. Greenleaf reports that he removed about 200 wounded from the field of Bull Run to Washington some days after the battle. I am unable to find details of these wounded but believe that they were men who had gotten away from the field and were straggling along the road to Washington.

Many wounded reached Centreville during the day of the battle. The Surgeon of the 31st New York dressed two hundred there. All the ambulances were loaded and sent from the field with the retreating troops in the evening. The rout was a medley of troops, citizens, guns, wagons, ambulances, and carriages on a single road. When the bridge over Cub Run was blocked all vehicles not past that point were lost. How many ambulances were lost is not known. The official Confederate report lists but seven as turned in. There were probably others not turned in. If reports of eye witnesses are to be believed, fleeing ambulances were filled with officers while wounded men filled all the houses along the roads. The whole flight was disgraceful.

The total casualties at Bull Run were: killed 483, wounded 1,011, total 1,494, or about eight per cent of the force actually engaged. Sherman's brigade suffered most severely, losing 328 men, a much larger proportion of casualties than any other brigade engaged. It is remarkable that the proportion of killed to wounded is almost one to two. Sherman's brigade had 109 killed and 208 wounded. There was a very large list of missing, many of whom fled, not only to Washington, but on to New York, or their homes.

An incident of this unhappy day, only slightly connected with the Medical Department, has never to my knowledge been commented on, and is worthy of notice. Dixon S. Miles, then Colonel of the Second Infantry, was in command of the Fifth Division which remained as a reserve at Centreville. The Colonel was sick on that day and his doctor foolishly prescribed brandy for him. By evening he was so drunk as to be unfit

for duty; this on the evening of the Battle of Bull Run, when the stoutest hearted needed all his faculties.

A court of inquiry was convened in November; it found that the designation "drunk" was correct but recommended that no further action be taken. The sequel appeared at Harper's Ferry, just before the battle of Antietam; the most disgraceful and humiliating surrender of the War. If this court had recognized the fact that a drunk man has no more reason to be in command of troops than an insane man, the miserable affair at Harper's Ferry would never have taken place.

This is not said in condemnation of Miles. I know the world-wide motto, *De mortuis nihil nisi bunkum*. Poor old Miles was but the victim of a bad custom, and made such restitution as he could with his life.

The court, had it done its plain duty, could have prevented this piece of what Upton called imbecility. They knew that he was subject to imbecility.

A few days after the battle, Medical Director King went out toward Bull Run with a train of thirty-nine ambulances, in an attempt to succor the wounded and if possible remove them. But this effort was also doomed to failure. The ambulances wandered around the country for a while, General McDowell failed to secure the necessary permission from the Confederate authorities, and the ambulances returned empty to Washington.

So ended the last of the futile efforts to care for the wounded at Bull Run. We have already seen how they were removed to Richmond as prisoners of war.

The Medical Director in closing his scanty report of the battle says, "Our retreat from the ground operated like a curtain to conceal from view all knowledge of the subsequent history of our cases, or the results of our ministrations." A welcome curtain that concealed or excused an almost total absence of preparation for or care of the wounded.

COMMENTS.

The making prisoners of medical officers at Bull Run seems to have been due to the general ignorance of the laws and customs of war of nearly every one at that time. Immunity from capture for medical officers and protection for the wounded had

been practiced at various times for three hundred years. It was a regular custom in the time of Frederick the Great and also in the Napoleonic Wars. After the fall of Napoleon everything military declined and with the rest this custom fell somewhat into disuse. The suffering of the wounded at Solferino in 1859 led directly to the Geneva Convention of 1864. That the custom was known in 1861 is shown by the clamor made by the captured surgeons. On being taken to Manassas they managed to make their complaints known to General Beauregard. He, being conversant with the military usages of Europe, wrote a letter to the Secretary of War at Richmond recommending that these medical officers be set at liberty. That this was not done was probably due to the civil authorities.

From the fact that fifty per cent of the wounded may possibly escape from the field unaided it is sometimes argued that transportation need only be furnished for one-half the injured. This argument is erroneous for two reasons, either of which is sufficient for its refutation.

In the first place, the knowledge that adequate medical service is at hand has for troops a marked supportive value. Still more important, if aid is not at hand, many able-bodied men will leave the field under the pretext of assisting the wounded. During the recent war as many as six burly Russians were often seen assisting one slightly wounded man to the rear. There is no doubt that at Bull Run, Shiloh and other places the sight of wounded straggling to the rear, and the loss of the men accompanying them contributed to the depression and defeat of the troops.

These reasons are purely mercenary. There is another that occupies higher ground: the volunteer soldier offers his very dearest possession to his country, his blood, his limbs, possibly his life. When that soldier is struck down shall his country leave him on the field suffering from cold, pain, thirst, even hunger; to die perhaps, without aid, unless he can drag himself away by his own painful exertions? Certainly when he gives his dearest possession the country should not be niggardly, when all it can give is dollars, but should supply an abundance of the best possible means for his succor.

The principal lesson of Bull Run is a very simple one—the

value of preparedness. The wounded lying on the ground where they fell, for days, in the rain, without attention, or even water and food, furnished an object lesson that impressed some few observers. It was not long until a beginning was made at a system of better care for the wounded. A year later on the same field conditions were little better. But the very misery of these fields had its use; it spurred to action men in and out of the army until there was created a system of satisfactory relief for the wounded.

It was not alone the Union Army that suffered defeat at Bull Run, some widely prevalent ideas suffered a rude shock that day. One was that a collection of armed men constitutes an army; it was demonstrated that a number of civil practitioners, however highly qualified and patriotic they may be, do not constitute a competent medical department for an army.

Unfortunately these ideas, like the army that day, were only hard hit. They survived and still exist to trouble us.

No previous plans, no organization, no enlisted personnel, no supplies, no ambulance corps, no field hospitals, no convoys for wounded, no evacuation hospitals—nothing could be expected in results. It is true that all advance formations would have been captured; but they would have served their purpose. Yet no particular person is to blame for this miserable neglect of the wounded. The era of scientific care of the wounded had not arrived. Even had our present organization been then in vogue it would have made no difference. As we had no Army we should of course have had no Medical and Hospital Corps. Three years had passed before the Medical Department was in a satisfactory condition. The nation that depends on scraping up an army after war begins must take the time to do it, and in the meantime will suffer.

The suffering of the wounded at Bull Run shows the natural result of an inadequate Medical Department; it also by contrast makes apparent the immense advance made and the excellent results secured in the later campaigns when the Medical Department was fully equipped, thoroughly organized, and ably administered. If the work of the Medical Department at the beginning of the war is a thing to be ashamed of, the work at the close of the war is a thing to be proud of.

In spite of the scanty numbers and slight equipment of the

Medical Department of the Army today, it is with a feeling of comparative satisfaction that one contrasts it with the Department in 1861. At that time the Medical Department was conservative to the verge of inertia.

It was not only behind the armies of Europe but it was behind the public knowledge and opinion at home. Volunteer regiments fresh from civil life had as good medical equipment as regular regiments. Ambulance corps were urged on the army by civilians long before Letterman adopted them. The first combination of regimental hospitals and ambulances into brigade organizations was in General Grant's volunteer army at Fort Donaldson, in February, 1862, under the management of Surgeon John H. Brinton, U. S. Volunteers. The Sanitary Commission was at times in advance of the Medical Department of the Army, and at one time stepped in and took charge. Today, on the contrary, the Medical Department may be justly called, in the political phraseology of the times, progressive. It runs ahead of civil progress at home and of the armies of the world abroad.

Witness the work of the Reed Board in making possible the elimination of yellow fever; the work done at Panama; and, probably more important than either, the present work of rendering the army immune to its most dangerous enemy typhoid. In this line it is ahead of all European armies and far ahead of cities and other civil communities.

As to the care of the wounded on the battlefield the Medical Department of the Army needs no urging from any one as to adopting new devices. It is eagerly on the lookout for any new scheme or method that will render the present plans ever more excellent. It seeks to foresee all difficulties and provide for overcoming them if possible.

The Surgeon General of the Army in 1861 was no doubt a worthy gentleman, he was about as much prepared for war as were the people of San Francisco for an earthquake. An army, in all its parts, has the same relation to the Nation that a fire department has to a city. It must always be prepared for its main function, and must be prepared to respond instantly, for rebellions and invasions are like fires, they are much more easily suppressed at the start than after they have gained headway.

APPENDIX.

Extracts from Army Regulations, 1861.

HOSPITAL ATTENDANTS.

1293. The senior medical officer will select the cooks, nurses, and matrons, with the approval of the commanding officer. Cooks and nurses will be taken from the privates, and will be exempt from other duty, but shall attend the parades for muster, and weekly inspection of their companies at the post.

1294. * * * The allowance of hospital attendants for troops in the field will be, for one company, one steward, one nurse, and one cook; for each additional company, one nurse; and for command of over five companies, one additional cook.

1323. The Secretary of War will appoint from the enlisted men of the army, or cause to be enlisted, as many competent hospital stewards as the service may require, not to exceed one for each post.

1331. Upon the march or in battle, medical officers will habitually be attended by an orderly, carrying a hospital knapsack.

AMBULANCES AND TRANSPORT.

1330. The following schedule of transports for the sick and wounded and for hospital supplies will be adopted for a state of war with a civilized enemy:

4. For a regiment of ten companies; two four-wheeled ambulances, ten two-wheeled ambulances, and four two-wheeled transport carts; and for greater commands in proportion.

TENTAGE.

1336. The following will be the allowance of tents for the sick, their attendants, and hospital supplies: for ten companies; three hospital tents, one Sibley tent, and one common tent.

BATTLE SERVICE.

1335. Before the action, the Quartermaster of the division makes all the necessary arrangements for the transportation of

the wounded. He establishes the ambulance depots in the rear, and gives his assistants the necessary instructions for the service of the ambulance wagons and other means of removing the wounded.

736. The ambulance depot, to which the wounded are carried or directed for immediate treatment, is generally established at the most convenient building, nearest the field of battle. A red flag marks its place, or the way to it, to the conductors of the ambulances, and to the wounded who can walk.

737. The active ambulances follow the troops engaged to succor the wounded and remove them to the depots; for this purpose the conductors should always have the necessary assistants, that the soldiers may have no excuse to leave the ranks for that purpose.

738. The medical director of the division, after consultation with the Quartermaster-General, distributes the medical officers and hospital attendants at his disposal, to the depots and active ambulances. * * * He will take post and render his professional services at the principal depot.

739. If the enemy endanger the depot, the Quartermaster takes the orders of the General to remove it or strengthen the guard.

740. The wounded in the depots and the sick are removed, as soon as possible, to the hospitals that have been established by the Quartermaster-General of the army on the flanks or rear of the army.

POPE'S VIRGINIA CAMPAIGN.

"Le soldat sait mourir pour son pays, il est habitué à l'idée d'être frappé par un balle ennemie. Par contre l'esprit de sacrifice n'est suffisamment développé pour lui permettre de supporter des souffrances qu'il juge inutiles. Il rapporte à ses chefs la cause de ses misères, et la demoralization est la consequence."

GENERAL SITUATION AND MOVEMENTS.

A LOST campaign will always show the medical department of an army at its worst. Even with a complete, well organized and equipped sanitary corps, many of the wounded will be left behind, and great suffering cannot be avoided. With an untrained corps, such as existed in this campaign, the fate of the wounded will be much like those of the battles of the Middle Ages; but without that callousness to suffering which existed even among civilized peoples at that time.

The Virginia Campaign of General John Pope, in 1862, was the most unfortunate large campaign of the whole war. A miscellaneous aggregation of corps, under generals ranging from mediocre to poor, or worse, marched ceaselessly and fought bravely for a month. The end was miserable failure which left the army within the fortifications of Washington, just where it had been when the war began. All the efforts up to this time had gone for nothing. One can scarcely read of it all even today without a feeling of humiliation and regret that such noble efforts on the part of subordinate officers and soldiers should have been rendered useless by blundering generals; that all the suffering and death on those fields should have accomplished nothing toward ending the war; even less than nothing.

After the failure of McClellan's Peninsular Campaign it was decided to withdraw his army by water to Alexandria, in order to unite it with another force, to be collected in front of Washington. This was done during August, leaving the Confederate Army free to move where it pleased. To protect Washington and draw off Lee from McClellan's embarkation, another army was formed, known as the Army of Virginia. Its life was brief.

The three small armies of Sigel (formerly Fremont), Banks, and McDowell were brought together above Culpeper on the last of July and placed under the command of General John Pope; a boaster who accomplished as much as men of his class usually accomplish. The psychology of this whole campaign would make an extremely interesting study. It was not neglected by Lee and Jackson. They appraised Pope as they had appraised McClellan; and with accurate precision.

McClellan's army came to Alexandria in fragments. Lee could not, and did not allow the two armies to unite, without first striking Pope. In spite of the exhaustion and losses of the Seven Days' Battle, and the danger of leaving Richmond unprotected, he hurried Jackson to the Rapidan early in August and by the 20th was behind the Rappahannock with his whole army, determined to strike Pope before McClellan should join him. This, thanks to the blundering of incompetent Union generals, he was able to do.

Pope's army at first consisted of three corps, each of two divisions, and numbered about 35,000 men. On August 11th Reno brought two divisions from Burnside's Corps at Fredericksburg, giving Pope another small corps. On August 23rd Reynolds joined McDowell with the fine division of Pennsylvania Reserves, greatly depleted, however, at this time. A few days before the great battles Porter and Heintzelman joined with two corps from the Army of the Potomac. This gave Pope six small corps with about 65,000 men. There was also some cavalry, probably 5,000 in all, which accomplished little or nothing more than killing their horses. It will be seen that this was not a homogeneous force. It was a collection of separate corps and did not work in harmony; far different from the experienced, compact, smooth-working, efficient machine it was to oppose.

Pope's duty was to defend Washington and draw off the Confederates from the James; but his boastful proclamations almost compelled him to take the offensive and march to the front. So the campaign began at Cedar Mountain below Culpepper, early in August. Beaten there, Pope gradually fell back along the Orange & Alexandria Railway, which was his line of communications. As Lee and Jackson were continually attempting to turn his right flank, the fighting all took place west and north

of the railway. The Warrenton Pike, a few miles to the north, was the main line of wagon road and on it most of the battles occurred.

Banks was beaten at Cedar Mountain on the 9th and Pope fell back to the Rappahannock on August 19th. On August 26th that position was turned, bringing Pope back to Gainesville. On the 28th he went back to Bull Run. The principal battle occurred on the 29th and 30th, resulting in decided defeat. On the 31st the army was at Centreville, on September 1st at Fairfax, and on the 3rd the troops were withdrawn within the fortifications of Washington. Two more Corps of the Army of the Potomac had joined the army on the 1st, but it was too late, the most unfortunate campaign of the war was ended. Pope's career had closed. He refused to see facts, seeing only what he wanted to see. The army fought well and suffered severely. The soldiers bravely strove, in so far as they were able, to atone for the faults of their leaders. Had they been less brave or the leaders more able, the losses would not have been so severe or the story so miserable a one to tell. Repeatedly pushed into suicidal positions, and not knowing that they were unsupported on either side, they deemed it their duty to stand, and they stood until often in danger of being surrounded and captured. No more steadfast fighting was seen during the war than in the wheatfield at Cedar Mountain, the field of King's battle near Gainesville, and in front of the railway embankment where Grover's Brigade made a charge which actually merits that overworked word gallant.

MEDICAL PLANS, ORGANIZATION AND EQUIPMENT.

Pope's army was like a scratch ball club. Various corps were suddenly brought together and plunged into an active campaign before they could be organized for team work. The medical department was like the balance, various, incomplete and not well organized.

The medical director of the army was Surgeon Thomas McParlin, U. S. Army, a competent man, who afterwards conducted the medical department of the Army of the Potomac through its greatest campaigns with eminent skill and success. In this campaign he had clear ideas and some plans, yet the outcome was largely a failure. The reasons for this will be pointed out.

MCPARLIN.



The country from the Rapidan back to Washington is a gentle rolling one with woods and cleared fields, traversed by passable roads. The weather during August was generally fine though excessively warm during the early weeks. Washington was the base with the Orange & Alexandria Railway for the line of communications. This road had been so often destroyed that it was in poor condition and the locomotives and cars were diminutive as compared with those in use today. Supplies were brought forward by this line, wounded evacuated by it, and the army clung to it throughout. The towns of Culpepper, Warrenton and Manassas were conveniently located for temporary bases of supply and hospitals.

The campaign began on the Rapidan with the supplies and hospitals at Culpeper. On August 19th they were removed to Bealeton Station. On the 27th they came back to Bristoe Station. Here the railroad was broken, and wagons had to be used to Centreville, and Fairfax Station, which was the main hospital on September 1st. By September 3rd everything was back in Alexandria.

Medical organization at this period of the war was crude. The ambulance corps idea was new. Letterman's order was issued on August 2nd, one week before Cedar Mountain. Porter's and Heintzelman's corps, coming from the Army of the Potomac, had their ambulance corps organized, but most of the ambulances were left behind at Yorktown or Alexandria. They marched out without wagon trains, some divisions without artillery, or even ammunition wagons; and with field officers on foot. It is hardly necessary to say that their troops had no ambulances.

As an example of what may happen, or rather will happen, in war, take the case of the Regular Division (Sykes) of Fitz John Porter's Corps; which it seems should have been supplied, if any. Asst. Surgeon A. A. Woodhull says, "There were no ambulances with the division from the evacuation of the Peninsula until we entered Maryland," that is during the entire time this corps was with Pope's army. Reynolds' Division, the Pennsylvania Reserves, probably the best volunteer division that the war produced, also had not a single ambulance.

All the divisions were not so badly off. McParlin says that Heintzelman's divisions had a well-organized ambulance corps.

In the three original corps there were no ambulance organizations by divisions. McParlin says that the Surgeon General sent him the Letterman plan, but he had no time to put it in operation. He does not say that it was ordered, and it was not ordered at this time. It seems probable that the Surgeon General only recommended the plan, somewhat as a trial, and shortly before the battles.

The three original corps had, of course, some ambulances when brought together. In McDowell's corps there were supposed to be three ambulances and one transport cart to each regiment. Actually there were but 41 ambulances and transport carts for 33 regiments. The shortage was 129. McParlin says: "As the report showed this corps to be the best supplied, the deficiencies of the other corps may be imagined." Of the transport carts he said, "The transport carts are useless, especially in a mountainous country. They kill numbers of horses, are slow at the best, and if used except for instruments and dressings will probably have to be abandoned by the road." He also said that the heavy four-horse ambulance was inferior to the two-horse ambulance, and this was the general opinion during the war. The General Ambulance Order of 1863 prescribed the two-horse ambulance. A full supply of ambulances and other stores was asked for, but few of them were received. The Quartermaster at Alexandria promised finally to send them on August 23rd, but the crowded trains prevented them and three days later the road was broken for good. The order of transportation at that time was: 1st Ammunition, 2nd Rations, 3rd Forage, 4th Medical supplies.

The Ambulances were sufficient for small engagements, but when the great two days' battle occurred near Bull Run, they were totally inadequate, even had they been organized in division trains. The Surgeon General had to be called on for ambulances; he forcibly gathered up a train of hacks and vehicles of all kinds from the streets of Washington and sent them to the field to bring in the wounded. This extemporization took the place of a service of the rear, which did not exist.

Letterman's field hospital plans had not yet appeared. Field hospitals were to be established in houses, barns and other buildings as at Bull Run, and McParlin's idea was to establish not division, or even corps hospitals, but one great field hospital in the

rear for the whole army. This plan failed. An army of 60,000 men in battle could not be served by one hospital, even with the contracted lines of those days. When the battle came he established his hospital on Bull Run, a central and safe place, but too far away for that period, being from four to six miles from the wings. Each regiment had two or three hospital tents and this was the only hospital tentage with the army.

There were something like clearing hospitals that followed the army; or rather preceded it, for it was always retreating. Three hundred hospital tents were held in readiness at Alexandria at the beginning of the campaign, and two hundred were shipped to Warrenton where they were afterwards used. McParlin did not intend to retain sick and wounded in the field, or to establish any general hospitals except at Alexandria. The distance to that point was short and the railway convenient. He says: "The railroad made our communication easy and speedy with Alexandria. I proposed to use it for transportation of wounded from depots near the field. It was impossible to hazard locating, and there was no time for organizing large hospitals nearer to the scene of expected battle."

A wise plan would have been to set up tent hospitals at Culpeper, and later at Warrenton Junction (now Calverton). He was obliged to depart from his plan, and organized hospitals at Culpeper, and at Warrenton, which was rather off the main line of operations. The base hospitals were at Alexandria. When filled the patients were evacuated to Washington, and these cleared in turn by sending them farther north. A tent hospital was also set up at Falls Church.

No systematic supply scheme had yet been devised for the armies. A plan somewhat out of the ordinary was tried. It did not prove an entire success, but it was a definite plan. McParlin says that the Surgeon General intimated that purveyors trains for each army corps were not suitable for this campaign on account of the increased risk of loss of supplies by that plan, but that one supply depot for the whole army would be most judicious; this depot to be at Alexandria. Had the army remained at Centreville, and it would have been better there, this plan would have been good. But when the army reached Culpeper McParlin soon found that it was a failure; and that it was absolutely necessary

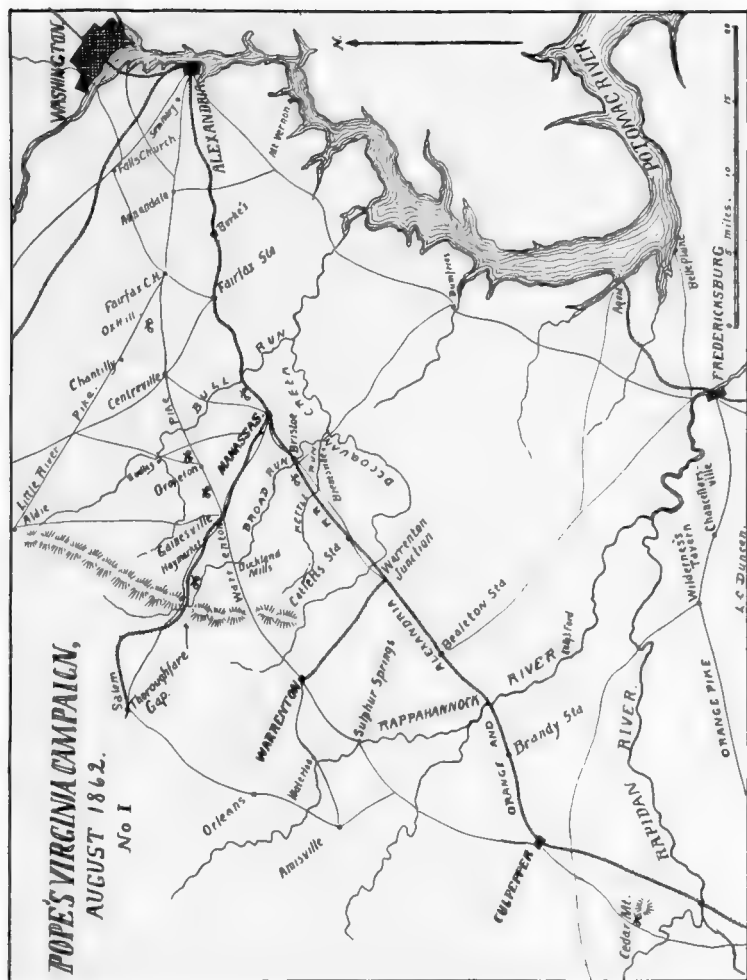
centralization. He says: "No other purveyor's depots for corps (except Sigel's) were organized. I soon found, however, that a small moveable depot would be necessary to furnish battle-field supplies; such as instruments, anesthetics, concentrated nourishment, cooking utensils, blankets, bedding and tents."

These supplies were secured, but instead of loading them in wagons as was generally done, they were packed in box cars and forwarded to Warrenton. From there they went on to Culpeper for the Battle of Cedar Mountain. Afterwards these cars came back to Warrenton Junction. McParlin was so pleased with his railway supply train that he had two cars fitted up with shelving for ready issue. This train seems to have been extremely useful while it lasted. When Warrenton was evacuated the supply trains came back toward Manassas, but Jackson had destroyed the bridges about Manassas, and the trains stopped at Bristoe. The army was defeated, the bridges were not repaired in time to remove the trains, and they were all burned on August 31st. So ended the railway supply trains. But the idea was a good one and not to be condemned on account of the outcome, which was not chargeable to the plan, but to the failure of a campaign that was a succession of blunders, if not worse. In fact these trains might have been removed, had not Pope sent such urgent orders, for the bridges were repaired the same night.

Aside from this source of supplies, each regiment was authorized to have three wagons for tents and medical supplies. At least that is the statement made by McParlin in his official report. He does not state that they actually had so many wagons and it is practically certain that they had not.

CEDAR MOUNTAIN.

On July 16th, McDowell's Corps was at Warrenton, Sigel and Banks at Sperryville, farther west. These corps had been cleared of sick and wounded before leaving their former stations and it was hoped that the regimental hospitals could care for the ordinary sick. But there appears to have been much sickness and it soon became necessary to have hospitals nearer than Alexandria. The two hundred tents were set up at Warrenton



10 *MEDICAL DEPARTMENT IN THE CIVIL WAR.*

and churches and other buildings used in addition. By the last of July enough sick had been sent back to Alexandria to fill the hospitals there; so they were cleared out to make room for others yet to come. There were no wounded as yet. A tent hospital was also established at Falls Church about this time. McParlin complained of the number of vagrant soldiers, malingers, and other skulkers that would congregate about the hospitals and endeavor to get to the rear; even before fighting began. McDowell's Corps of 23,000 had during July an average of about 1,100 constantly sick and sent 1,017 to the base hospital.

By August 8th, all the corps had moved forward to the vicinity of Culpeper. The hospital at Warrenton was broken up and the tents moved back to Alexandria; the supplies were brought forward to Culpeper. On the morning of the 9th General Banks' Corps left its camp and marched out seven miles to near Cedar Mountain (Slaughter Mountain). At four that afternoon, Banks rashly pushed his two divisions into a determined attack on Stonewall Jackson's entire corps. No engagement of the war was more fiercely contested. In this battle as in all the battles of this mournful campaign, the soldiers bravely did what they might to repair the mistakes of their leaders. Banks placed his men in a suicidal position and they were too brave to retreat; they stood until one-third their number were either killed or wounded. Finally after dark they were withdrawn across the run, leaving their very badly wounded behind.

This action did not begin until five and the wounded did not begin to come in until dark. Field hospitals were established for both divisions, in the wooded valley of Cedar Run. The First Division hospital received six hundred wounded by nine o'clock, dressed them without much operating, and sent them on to Culpeper by ambulances and on foot. This division had 1,007 wounded, probably more. The Second Division hospital treated about four hundred; there were three hundred and thirty-nine reported wounded in this division. The ambulances of the division disappeared and the wounded came in on foot or were carried by their comrades. Colonel Donnelly, of the 28th New York, came in on a horse, wounded in the lower part of the abdomen; the ball lodged in the pelvis and supposed to have

passed through the bladder. He was sent in to Culpeper and lived seven days. The wounded in this hospital were operated on before being sent to the rear. The night following the battle was one of brilliant moonlight, the surgeons set up their tables in the open air and worked until morning. Late in the night the air turned cold and they observed that it had a bad effect on the very gravely wounded, of whom there were many, the battle being fought almost hand to hand. All the surgeons commented on the number of wounds of the chest and abdomen.

The total loss in this battle was 314 killed, 1,445 wounded, and 622 missing. As the Confederates reported but 400 prisoners there is little doubt that the remaining 200 were either killed or wounded. The men of Banks Corps returned sadly to their camp where the many empty tents told the story of their useless sacrifice at Cedar Mountain.

During the next day (August 10th) the work in the field hospitals went on, but there were many still lying on the field, at the most advanced position, now occupied by the enemy. These sufferers were without help until Monday. Finally on the eleventh some surgeons, chaplains, and soldiers ventured forward without authority to try to do something for their comrades, now thirty-six hours without food or care. They were not halted but by some informal arrangement were allowed until two o'clock to gather up and remove the wounded, who were first paroled. By night all the wounded were back in Culpeper. Some of the surgeons met Jackson himself, who treated them well and placed no obstacle in their way, only reminding them that they should not take advantage of their opportunities for observation, and report what they saw within his lines. His army was then leaving its position.

There were few tents at Culpeper, so the wounded were placed temporarily in churches, hotels and other buildings, and McParlin applied to the Quartermaster for a train of cars to remove them to Alexandria. Next day (August 10th) he went to the front, expecting the battle to be renewed. The wounded being all recovered on the eleventh he returned to Culpeper, and found the surgeons there so busy with the work that they had forgotten the train that was waiting on the track. He placed Surgeon John H. Rauch in charge of the hospitals at Culpeper,

now containing some 1,500 wounded, and began evacuating them to the rear.

The first train left on August 12th carrying 480 patients. Each train had medical attendants, water, subsistence, straw (on the floor of the cars) and necessary bedding. Thirty cases with recent amputations were carried over the 70 miles of poor track without mishap. These were not hospital trains, or even passenger trains, but returning box and stock cars bedded with straw. The conduct of these trains appears to have been so excellent throughout the campaign as to have exacted no criticism; an unusual thing in transportation of wounded.

A small relief station was established near the depot at Culpeper so that there should be no lack of care at the point of transfer. It was at such points as this that patients often lay for hours without care. All transportable cases were removed by August 18th. The Alexandria hospital reports show 891 patients received from Cedar Mountain, out of 1,445 reported wounded.

A temporary hospital, with the supply cars, was maintained until that date. Articles of supply, including ice, were brought from Alexandria as needed, but nothing permanent established, for despite Pope's proclamations the army expected to retreat. The management of the wounded at Cedar Mountain was excellent and elicited praise from the Surgeon General.

From the small skirmishes that took place from day to day the wounded all came back to Culpeper; but the regimental tents and supplies were with the regiments, several miles away.

The condition as to medical officers was the same; the the front. The three corps at this time consisted of about 90 regiments and had 273 medical officers; all attached to regiments and brigades except the nine medical directors of corps and divisions. This faulty arrangement showed clearly the need of division hospitals with separate personnel and equipment.

In Culpeper the following hospitals were in use at this time: Episcopal, Baptist, Methodist and Presbyterian churches; Piedmont, Virginia, and Depot hospitals, Masonic Hall, Tobacco factory and an encampment near the depot.

After the fight at Cedar Mountain medical officers had to be sent back from the front to serve what should have been the

clearing hospitals at Culpeper, though a renewal of the contest was confidently expected. This fault also was due to the lack of organization in the rear.

McParlin says:

The experience at Culpeper also caused me to add to the purveying depot of battlefield supplies a proper staff of good operating surgeons and executive men; quick to receive the wounded, to place them in trains, or direct them to remain at the depot hospital; other assistants informed how to procure subsistence, to have food for hundreds or thousands cooked and served at once, others to superintend the forwarding of wounded in the proper manner—to accompany them if necessary—and especially to observe that none but proper cases were sent away.

This was in effect a clearing hospital for the whole army, the first clearly conceived one of the war. It was a day's march to the rear, at the head of rail transportation, was not intended to be permanent, and was to be moved by rail when necessary. McParlin was learning rapidly. His only great mistake was in organizing but one such hospital for the whole army. His outfit would have sufficed possibly for one corps. There were then three corps, and soon after six.

This hospital was continued throughout the campaign under charge of Surgeon Rauch. Later it was held nearer the battlefield and took on more of the character of a field hospital. The ambulance service at this time was directed by Surgeon Jackson of the 16th Pennsylvania. The ambulances ordinarily remained with their regiments, but were collected and used independently when necessary. This was very unsatisfactory.

McParlin says that soon after this date he received the Letterman plan from the Surgeon General, but there was not sufficient time to put it in operation.

General Reno joined the army with two divisions from Burnside's Corps at Fredericksburg on August 14th. Reno brought 8,000 men which more than made up for the losses at Cedar Mountain and by sickness and other causes. Banks' Corps, however, was shortly after placed in charge of the army trains and took no part in the battles which decided the campaign.

When the work at Culpeper was finished the ambulances had been in use for a week; forage was scarce, the animals were becoming weak, while the brigade and regimental commanders were

clamoring for their return. When away from their own commands the animals were often without feed, and the drivers without rations. As McParlin observed in his report, a separate ambulance corps would have obviated these difficulties.

EVENTS PRECEDING THE BATTLE.

On August 18th and 19th Pope withdrew to the eastern bank of the Rappahannock. Lee's whole army was approaching. The wounded and sick at Culpeper were all sent to Alexandria, except a few not fit for transportation. With them surgeons volunteered to remain, and supplies were left. The purveyor's stores were packed in six cars and sent on down the railway as far as Warrenton Junction (Calverton). The last train left Culpeper on the night of the 19th. The army now took up a position on the left bank of the Rappahannock and Bealeton Station was selected as the site for the hospitals and urgent supplies.

Everything was made ready for the battle that all expected here. At no other time during the campaign was the Medical Department so well prepared for battle. But it was not General Lee's purpose to attack. There was skirmishing at the fords resulting in some 250 wounded who were easily cared for and sent to the rear.

Taking counsel from his troubled experience in loading and unloading stores at Culpeper, McParlin had his cars of medical supplies run on a siding and issued what was needed directly from the cars.

This plan was so satisfactory that he telegraphed to Alexandria, directing that two cars be fitted up with shelving and fixtures convenient for issue; to be filled with the most necessary articles; such as: medicines, instruments, dressings, stimulants, anesthetics, prepared foods, blankets, water buckets, lanterns, etc. These cars were ready on the 23rd and were used until burned on the 31st. He also made a last attempt to get the ambulances, medicine wagons, animals and other things necessary to complete his equipment, but the trains were overcrowded and he failed.

On the 22nd a small cavalry force got in the rear and struck the railroad at Catletts Station, destroying, among other things, the headquarters' baggage. Even the surgeons' things were not spared. McParlin says with evident feeling:

My office records were scattered, several valuable papers and maps lost, and my servant, horse and bedding had disappeared. * * * It may be conceived what sort of a life was led by us at the front.

They were destined to see worse things.

While on the line of the Rappahannock the Medical Director had an unusual amount of trouble with malingerers and skulkers, who thronged every hospital and tried to climb on every train going to the rear. The blame for this was usually put on Sigel's Dutchmen, but it probably existed in most corps. The 60th New York had a virulent outbreak of typhoid, hundreds being stricken in a short time. These men, with the malingerers, overran the hospital at Bealeton. On August 22nd Capt. Fifield, in charge of the Railway there, telegraphed McParlin:

The enormous number of complaining and sneaking men who come in here claiming to be sick will take all the transportation of the road and nothing will be left for the wounded.

And Surgeon Rauch sent many similar telegrams, as: "With each supply train I see three or four men running away. A cavalry patrol should be ordered here to prevent and arrest them;" and, "I have just stopped a train of ambulances that was going to the rear. If I had the detail of men I would have arrested several drivers." And so on, many others of like tenor; showing a failure of discipline throughout the army. The lack of control of the ambulance drivers grew worse and worse as the campaign progressed.

From the time that Pope took the line of the Rappahannock the troops had no rest. There was a continual marching and counter-marching. Corps marched up the river one day and down again the next. The men were worn out by repeated and often unnecessary marches. Not only this, but the daily issue of new orders, often immediately followed by others countermanding them, showed a lack of continuity of purpose, the absence of central controlling ideas, that soon became apparent to the body of officers and even to the men. Though the army never failed to fight, and up to the best standards, it was gradually becoming exhausted and spiritless and steadily losing faith in its leaders.

To add to this weakness, rations became scarce and irregular, partly due to insufficient provision, partly due to complex marching; one fault reacting on and increasing others. There are still extant letters from officers complaining of the scarcity of food early in the campaign. Jackson's men could live on green apples and roasting ears, but our officers expected something better. When the railway was broken on August 26th and supplies had to be wagoned out, the condition was aggravated, and during the closing days of the campaign the exhaustion of actual hunger was added to that of fatigue and mental depression.

The Confederates doubtless marched as far and had as little to eat. But their marches had a definite (and simple) aim, that could be comprehended by the most ignorant soldier. As to short rations, they hardly expected anything else. And at the end of the campaign they too were exhausted. Jackson's invincible corps marched but nine miles on September 1st. The attack was not pushed with the accustomed vigor and was successfully resisted by smaller numbers.

On August 25th it was learned that Jackson was moving to the right, but where? The wounded and sick were sent back to Warrenton Junction and the whole army began to move back slowly. The Surgeon General anticipated a general engagement at this time and sent out a party of high ranking medical officers from Washington; but no battle took place and they returned on the 28th. Had they waited but a few days longer they would have seen enough of battle and wounded to satisfy any reasonable anticipation.

Such wounded as came in were cared for in tents at Warrenton Junction, where the purveyor's cars were with plentiful supplies. A temporary hospital had been established at Warrenton for the 60th New York and other troops in that neighborhood. This hospital was now broken up (Aug. 27th), the furniture and patients were loaded in cars and all sent to the Junction, preparatory to being sent on to Alexandria. The trains were loaded and the army moving on the 27th when, as McParlin says: "Extensive fires appeared eastward in our rear, and it was rumored that the railway was cut by the enemy." This rumor was well founded.

Jackson, leaving his trains behind, had made a remarkable march of fifty-two miles, passed through Thoroughfare Gap and on to Manassas without Pope's knowledge. The fires were con-

suming millions of dollars worth of rations and stores in warehouses and cars at Manassas. (Jackson's corps ambulance train at this time consisted of thirty wagons.)

Although Jackson held the railway there but 36 hours, he so effectually destroyed the bridges over Broad Run and Bull Run that no more trains got to the rear. The engineers, by hard work, finished Bull Run bridge on the 31st, it was burned again the same night.

All the trains were now cut off from Alexandria. On August 27th General Halleck sent out a brigade of New Jersey volunteers to open up the railway at Manassas. This force crossed Bull Run and had almost reached the Junction when it unexpectedly ran into Hill's Division and was almost annihilated. The survivors fled and did not stop till they reached Alexandria.

The severely wounded were doubtless left behind and fell into Jackson's hands. He, in turn, was obliged to leave the worst cases next day, but carried the slightly wounded on to Sudley Ford where most of his prisoners were paroled. Banks' Corps reached Manassas on the 28th and picked up all the wounded and sick there, including some Confederates.

In the march on the 27th Hooker's Division (Heintzleman's Corps) had the advance along the railway. These troops had been hurried out from Alexandria a few days before. Many of the field and staff officers were on foot, their horses not having left Yorktown. It was observed on this march that there was not the usual strife with stragglers, and it was claimed that those mounted officers who had maintained that riding caused greater fatigue than walking, and had heretofore been most exacting with the foot-men, were now the first to fall out from exhaustion.

Hooker had a fight with Ewell's Division which maintained a delaying rear guard action west of Bristoe. The losses amounted to 250. Medical Director Milhau established a field hospital at Kettle Run. This division had almost no trains or supplies but had an Autenreith medicine wagon and a few ambulances with headquarters. Next morning a hospital was established at Bristoe. The purveyor's cars reached Kettle Run that day and stores were plentiful.

Just previous to Jackson's raid Heintzleman's and Porter's Corps had marched out from Alexandria and Aquia and joined the army near Warrenton, Heintzleman on the 24th, Porter on

the 26th. Reynolds, with the Division of Pennsylvania Reserves, had joined McDowell on the 23rd. The army now numbered close to 70,000 men.

On the 27th the various corps had reached the vicinity of Gainesville and points farther south as far as Bristoe, with the rear extending back to Warrenton. On the 28th all moved on toward Centreville, by the Warrenton Pike, the Railway and intervening roads. On this day Banks' corps was moved along the railway to guard the wagon trains of all the corps, which had flocked in to Warrenton Junction. Thenceforth this corps guarded trains and took no part in the battles. When the corps moved eastward on this morning McDowell knew that Lee was approaching Thoroughfare Gap with the balance of his army. So he left Ricketts' Division to guard the Gap. Ricketts engaged the enemy and detained him for three hours, but was forced to retire. Surgeon N. R. Mosely, U. S. Volunteers, was medical director of this division. He established a hospital in a large frame house about a mile in the rear, bringing the wounded, thirty-nine in number, to that point in ambulances. After the battle they were loaded in an ambulance train and started toward the railway at Manassas under charge of Brigade Surgeon J. T. Heard, afterwards medical director of the First Army Corps. This was on Thursday afternoon.

On Sunday Surgeon Mosely was at the general field hospital on Bull Run. He says:

I found here Dr. Heard, who had left Gainesville with wounded, in ambulances on the 28th. He had been unable to reach Manassas, but the wounded had been faithfully cared for by him, notwithstanding they had been on the road for three days and a half.

That Surgeon Heard was able to bring his ambulance train through this broken country, filled with marching troops, and everywhere fought over, is not less than remarkable. One wonders how he fed them and what the division did for ambulances during this time.

On the morning of the 28th Jackson left Manassas, marching around by Bull Run, one division by Centreville, then west on the Pike, to take up a position on a stony ridge running from Sudley Ford to a point a little west of Groveton. Here he remained throughout the battles that followed. An old railway grade along his front made excellent cover. Very late that afternoon, while

the Union divisions were marching eastward on a fool's errand to Centreville, King's Division (McDowell's Corps) came marching down the Warrenton Pike from Gainesville, past Jackson, and all unconscious of his presence. It was sunset when the last brigade left the town. The weary men were plodding along and had almost reached Groveton when suddenly shells began exploding in the midst of the column.

Poorer troops would have bolted, these were of the Iron Brigade, now under General Gibbon. They were promptly faced to the left and aided by two other regiments advanced towards the woods. Five brigades of Ewell's and Taliaferro's Divisions marched out to meet them. The lines halted within seventy-five yards of each other and fired into each other's faces until the darkness of an unusually black night ended the useless slaughter.

The old Stonewall Brigade had met the Wisconsin Iron Brigade and on no field of the war was there a more stubborn or murderous combat. "Within the Federal lines the dead and wounded lay in pairs and heaps, a ghastly sight on the green turf beneath the trees, or near a pathway leading from the field, where in the darkness of the night many of the wounded had dragged their fainting bodies. When the surgeons gathered in the wounded, bits of candles and burning torches shed through the gloomy forest a gloomier light." Of the six regiments nearly one-half lay dead or wounded on the field.

On the other side there was evidence that the Stonewall Brigade had at last met men worthy of its steel.

Ewell lay out in front of the railway embankment, helpless and bleeding, with a ball through the knee. Taliaferro was wounded. Colonel Botts of the 2nd Virginia and Colonel Neff of the 33rd were dead. The Colonel of the 27th and the Majors of the 2nd and 4th were wounded. The losses in the other brigades were appalling. These were in Taliaferro's Division. The two brigades of Ewell's Division had 219 killed and 539 wounded. The Union loss, including missing, was about 850. Gibbons' Brigade had 133 killed and 539 wounded. The division commander, King, was not wounded, but next day had to give up the command from exhaustion and sickness.

When the firing ceased the wounded were gathered up and the brigade withdrawn to the road where the men lay down to sleep with arms in their hands while the generals debated as to what to

do. They decided to leave the Pike and continue the march by way of Manassas.

All wounded that could bear transportation were loaded in ambulances; there could have been little dressing in the darkness that night. The gravely wounded were left on the ground, in charge of surgeons, the report says. Many lay where they fell, in charge of no one. Fortunately in the battle of the next day the advance of Reynolds' Division reached the scene of Gibbons' battle north of the Pike, and the hospital south. The wounded who had remained on the field uncared for during the night, and through the conflict of the day, were recovered.

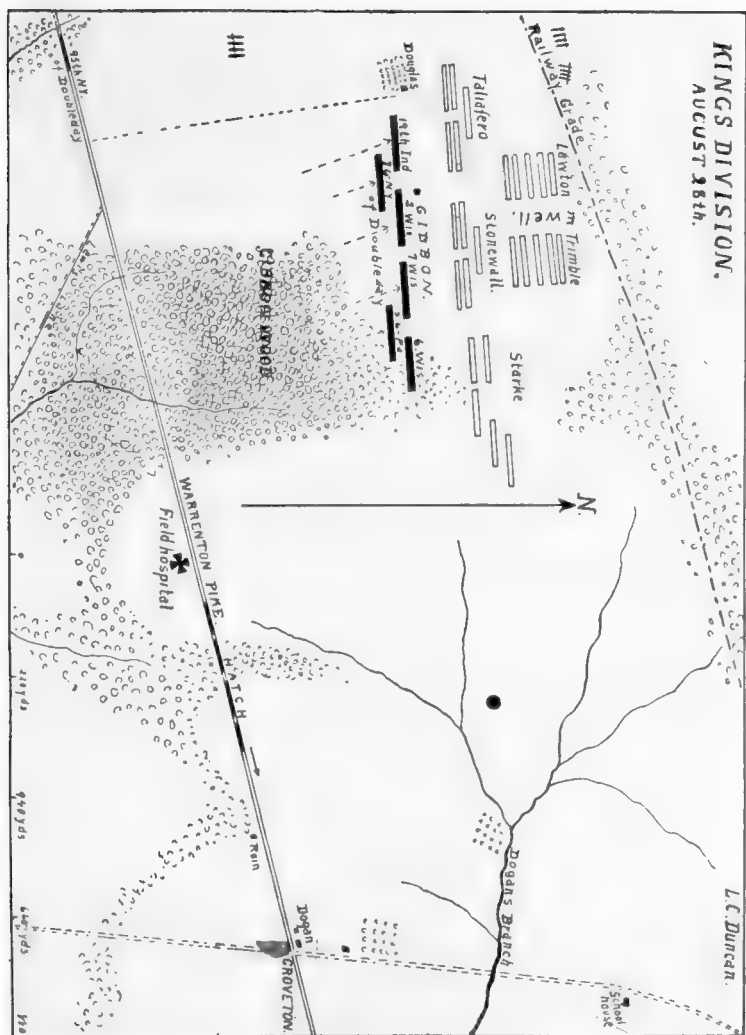
It is interesting to note the fatigue, exposure, and deprivation to which men were subjected in this campaign.

The men of King's Division had marched from early morning on the 28th and went into battle instead of camp at dark. After the conflict described above they had a little rest, but at one they marched again, reaching Manassas at six next morning. Here they had a little food, but before they could butcher the beeves that were to feed them the order to march came again.

They reached the battlefield in the afternoon and at six were rushed forward at double time for a long distance, and into an assault even more fruitless and suicidal than the one of the evening before. The division made this attack alone, and only darkness saved what was left of them from death or capture. The men had neither dinner nor supper this day, and it is said they asked for none, but silently rolled themselves in their blankets at night.

Few, if any, of the troops had rations that evening. On the afternoon of the 30th King's Division was put in alongside Porter's Corps in an attack against the railway embankment. The assault was as obstinate as any of the war, but all in vain. Hatch, now in command, was wounded; and the lines fell back. McDowell says that Gibbons' Brigade (the Iron Brigade) remained on the Henry House Hill that night until the whole army had crossed Bull Run, then burned the bridge and retired on Centreville, which it could not have reached until long after midnight. The division lost 892 men in the three days.

After King's fight near Groveton the division retired to Manassas and Ricketts followed him there. By the morning of the 29th the whole army was at Manassas and points farther east.



Banks, Porter and McDowell were near Manassas, Heintzleman, Reno and Sigel near Bull Run. Pope was at Centreville.

Jackson sat tight and Longstreet was about to join hands with him.

The Confederate corps were ready to unite. The Union army could only claim to be between it and Washington.

Banks' Corps was near Bristoe with the trains. When the medical supply cars were halted there McParlin had three-fourths of the stores taken from the cars and placed in some wagons of Sigel's Corps that were passing. Sigel always clung to his wagons. It was said that Napoleon put his trust in heavy battalions, Sigel in long wagon trains.

Medical Director Rauch with the operating surgeons, cooking department and stores was sent on to Manassas. The remainder of the stores were left for Banks' Corps.

When it came up Medical Director Antisell collected 480 sick and wounded and placed them in cars, expecting the bridges to be restored so he could send them on to Alexandria.

McParlin often found it difficult to secure rations for the sick and wounded; commissary officers refusing to issue rations except to their own special commands. To remedy this fault he secured the following order:

HEADQUARTERS ARMY OF VIRGINIA,
August 29, 1862.

To the various commissaries of Volunteers of the Army of Virginia:

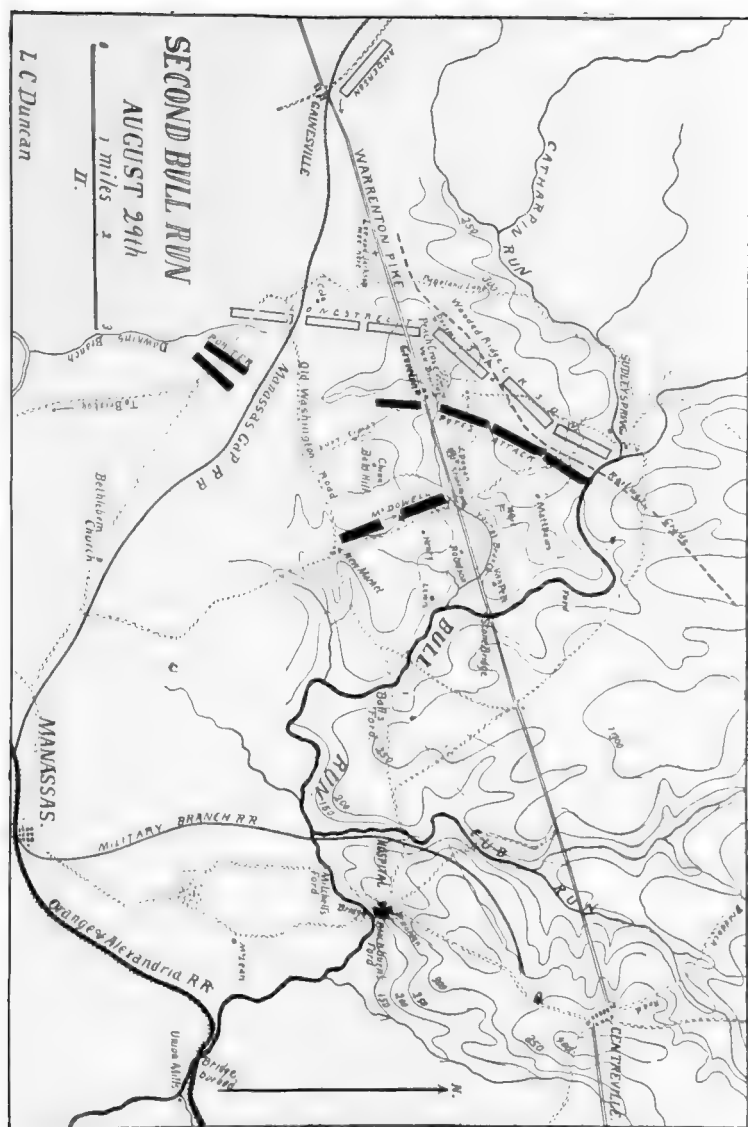
You will each of you issue rations to hospitals in the field on surgeon's requisitions or returns, no matter to what brigade, corps, or command either commissary or surgeon may belong.

By order of Major General Pope:

E. G. BECKWITH,
Chief Commissary of Subsistence.

FIRST DAY'S BATTLE.

On the morning of the 29th Pope prepared to move with all his corps (except Banks') and attack Jackson, who still lay on his rocky ridge behind the old railway grade. Banks remained at Bristoe guarding the railway trains and the wagon trains of the whole army. The other corps, heretofore moving eastward, were to turn back and converge on Groveton. They were directed to march around by Centreville, then turn west on the Pike, and attack the enemy when they met him. This useless circuit delayed



the battle until noon. Reno advanced near Sudley Springs, Heintzleman north of the Pike and Sigel south. Porter and McDowell were farther south toward Manassas; McDowell marched north on the Sudley Road but did not reach the field until near night. Porter remained out of the fight the entire day. So of the six corps but three were engaged. Jackson, on the other hand, had been joined by Lee before noon, though not actually aided in the fight by more than two divisions. The fighting was severe and on the right some ground was gained. In the center there were some desperate charges against the railway embankment, but nothing was actually accomplished except useless slaughter. Jackson's troops were fairly well sheltered and Pope was allowed to shatter his corps against them. The loss in killed and wounded was about 4,000.

Early on the morning of the 29th McParlin selected the site for his main field hospital. He says:

Reconnoissance showed that the bridge (R. R.) towards Fairfax Station was burned. I had to locate the depot near the bridge or ford north of Bull Run (Mitchell's Ford) which was on the road from Manassas to Centreville, and near the main body of the army. At the same time it was accessible by a branch from Centreville to Manassas Junction. Should we remain there long enough to have the bridge repaired (R. R. bridge over Bull Run) we could afterwards transport supplies and wounded by the railroad.

Manassas had been the headquarters, now at Centreville, and Pope had plainly intimated that he contemplated moving the whole army to Centreville. Unfortunately he did not do so soon enough. So the hospital was naturally located at the ford on the road between the two places. Yet the battle was expected to take place near Groveton or Gainesville and the Warrenton Pike led directly from Gainesville through Groveton to Centreville, almost in an air line. It seems that the eastern bank at the Stone Bridge would have been a better location for the great field hospital in the battle that was to come. It involved transportation for a shorter distance over a better road.

It is true that the ford is nearer the railway, but there is no good road from there to the railway, east of Bull Run, except by Centreville to Fairfax Station. The branch line offered some prospect in advantages, but they were contingent on Pope's suc-

cess, which neither his past achievements nor his present actions gave promise of.

McParlin goes on to say:

"Inspector Vollum, Medical Director Rauch, and the purveying depot took position immediately at the bridge, occupying a building near the river, which had a well of water in the yard. There were no supplies destroyed or left at Kettle Run, all being brought forward to the depot by Dr. Rauch, or used there by Medical Director Antisell. While General Banks remained at Bristoe (until Aug. 31st) any supplies needed were drawn from the cars by wagons.

Surgeon Antisell, however, says:

When the corps left Bristoe Station the train of cars left behind with quartermaster and other stores, one with purveyor's property, were set on fire.

Banks burned five locomotives, one hundred and forty-seven cars, and part of his trains, by Pope's orders. Most of these cars had been emptied.

McParlin formed his general hospital early and the battle did not begin until near two o'clock. He says:

After these dispositions were made, on the 29th, I joined headquarters in front, passing through Centreville and along the Warrenton Pike, beyond Bull Run. * * * The engagement was kept up actively. Wounded were brought in from the front and received the attention of the brigade and corps medical officers that night. The view from the Headquarters (Buck's Hill, north of the Stone House) embraced a most extended country, filled with troops, the lines of camp fires stretching for miles away towards Thoroughfare Gap. It was confidently expected at Headquarters that the enemy, if vigorously assailed before reinforcements arrived, would be cut to pieces or captured.

But the assailing was piecemeal and reinforcements arrived before noon. Lee's whole army was now up.

The wounded from the day's action were numerous. I informed the Surgeon General of our condition and prospects, requesting surgeons, battlefield supplies, and ambulances to be sent from Washington; this by courier to the nearest railway station.

When darkness fell the gathering up of the wounded from between the lines began. The Federal troops had made a number of determined attacks, reaching positions which, from lack of support, they were compelled to abandon. These assaults left

many wounded up close to the opposing lines. Warren Lee Goss, in his *Recollections of a Private*, says:

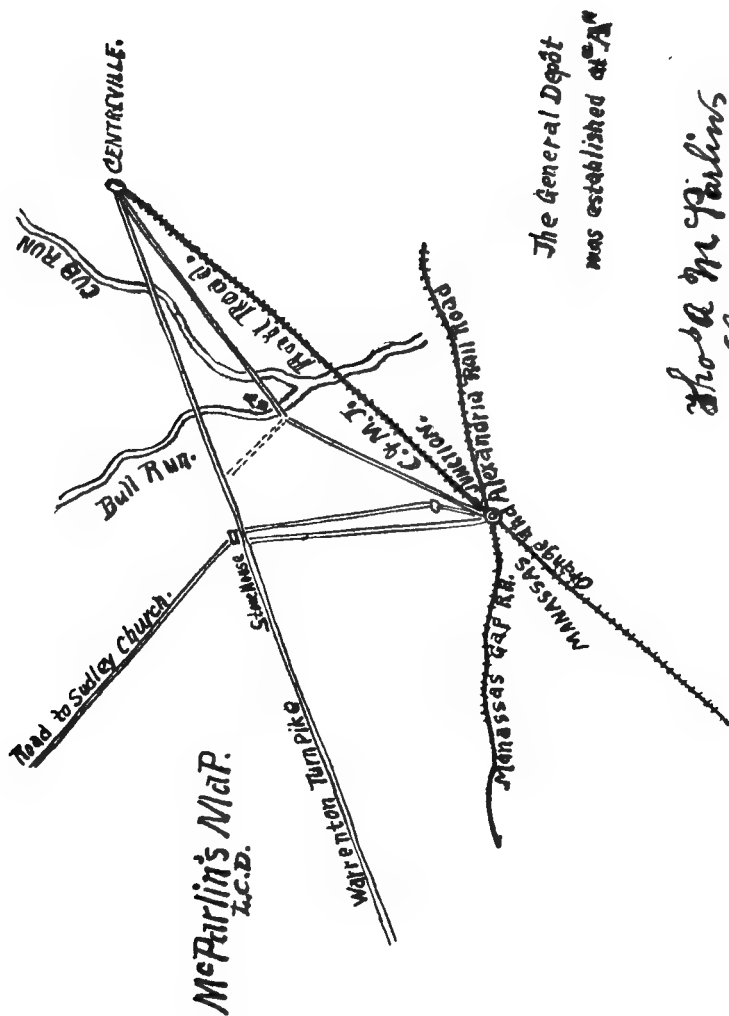
At the end of the first day's battle, August 29th, so soon as the fighting ceased many sought without orders to rescue their comrades lying wounded between the opposing lines. There seemed to be an understanding between the men of both armies that such parties were not to be disturbed in their mission of mercy. After the failure of the attempts of Grover and Kearney to carry the railroad embankment the Confederates followed their troops back and formed a line in the edge of the woods. When the firing had died away along the darkling woods little groups of men from the Union lines went stealthily about, bringing in the wounded from the exposed positions. Blankets attached to poles and muskets often served as stretchers to bear the wounded to the ambulances and surgeons. There was a great lack of organized effort to care for our wounded. Vehicles of various kinds were pressed into service. The removal went on during the entire night, and tired soldiers were roused from their slumbers by the plaintive cries of comrades passing in the comfortless vehicles.

The first day ended gloomily; thousands had been lost to no advantage; the men were exhausted, rations scarce, and confidence being gradually lost. Pope telegraphed that night that he had lost 8,000 and the enemy twice as many, that Ewell was killed, Jackson wounded, etc.

McParlin goes on to say:

As the turnpike to Centreville was very rough, several bridges destroyed, and our general depot was near the bridge (Mitchell's Ford), I instituted a search and found a short road running from the Centreville (Warrenton) turnpike, near the battlefield, directly to the general depot. I sent circulars to the corps directors, informing them where the wounded should be sent, and stationed some mounted men on the Pike, to direct the ambulances and wounded properly.

It appears clear from this statement that McParlin had no map of the region, and no idea of its geography except what he gradually obtained by experience. It is difficult to believe that the wounded were moved by the Pike nearly to Centreville, and then back to the ford, but that is what was done, until he found his shorter road. Pope, in his order for the battle, had directed the corps from Manassas and the Fords to march by Centreville to attack the enemy near Groveton. They were all in need of a course of map study.



Thos McParlin
Surgeon U.S. Army.

The road that McParlin found appears to have been a by-road leading by the Robinson House, as shown in his map.

The distance back to the hospital was so great that the ambulances could make but few trips, even if the wounded could be reached.

McParlin's sketch map, submitted with his report, may be compared with a correct map of the field, to determine how accurate his mental picture of the ground was.

His map places the hospital at Island Ford, but his own statement and all the other accounts locate it at the Holden House, near Mitchell's Ford.

SECOND DAY.

POPE should have withdrawn to the strong position of Centreville on the night of the 29th, but he never saw facts, believed that the enemy was retreating, and next morning sent columns to follow him up. All the corps except Banks' were put into the fight on Saturday. The battle once more did not begin until near noon. Jackson was again assailed without success, but now Lee was ready with Longstreet's Corps, which advanced in a wide turning movement south of the Pike, sweeping the Union divisions back in confusion and capturing guns, flags and prisoners.

When this took place Jackson also advanced, and both the right and left columns reached Bull Run. The Union center, however, held fast on the old battlefield until darkness halted the Southern advance. In the growing dark Pope gave the order and the whole army defiled over the Stone Bridge, reaching Centreville about midnight, not without some confusion.

The loss of this day was about equal to that on the first day, or a little less; but as the troops were steadily beaten back, continually losing ground, a large proportion of the severely wounded were left on the field.

McParlin says:

On the 30th the battle was renewed on our right and continued for some hours. The enemy seemed to be moving to our extreme left and on Manassas.

The engagement became warmer hour by hour, especially in the center and near the turnpike. The ambulances had been busy all day conveying wounded to Bull Run hospital depot. I had for this duty the valuable services of a captain and lieutenant of the newly organized ambulance corps of Heintzleman's Corps. I joined Headquarters about four o'clock, observing meanwhile the ambulance and litter service around me. The field for miles away, with moving troops, volleys, explosions and dust of shell and shot were all in view from the high crest which we occupied (Buck's Hill).

The dust of the enemy's main army train on the left, the advance of our regiments, and the long line of the enemy's artillery fire from the crest of the Manassas Gap Railway were very conspicuous. I believe nearly 1,500 were received and fed in the depots that day. (Apparently



no accurate record of the number was kept.) I had made the best arrangements which, in my judgment, I could effect with the means at my disposal; but as I looked over the scene, I felt impressed with a sense of how little could be accomplished at that hour. The wide field for miles resounded to the shock of two great armies. The field in front was shrouded in dust and smoke. Wavering troops emerged from its folds and rallied, while new combatants pressed onwards.

The tide of battle swept backwards and forwards, the crackling of musketry seemed almost continuous.

Well might he feel powerless before such a scene. And with troops continually falling back in such a manner even an excellent

organization would have been largely powerless. When the reports say that brigades and regiments "withdrew" or "fell back," it should not be understood that they moved backward as if on parade. Some of them stood not on the order of their going.

Fifteen hundred was not more than one-third of the number wounded on the second day. Yet it taxed the capacity of the general field hospital. Provisions and supplies were scanty; it was extremely difficult to find even hard tack and beef for the wounded there. The supply trains were with Banks at Bristoe, now cut off from the army, by the Confederates. The railroad was impaired and but scant supplies were received from Alexandria. The small force of surgeons was entirely insufficient. Had all the wounded been brought in this hospital would have been deluged.

Surgeon Mosely says:

I took the few wounded to a spot about a mile and a half to the right of the battlefield near a small stream (probable Young's Branch). At this point I met several medical officers, among whom was Surgeon McParlin, the Medical Director of the Army, who informed me that the wounded were all to be sent to the depot hospital in the vicinity of Bull Run. At his request I proceeded there for the purpose of assisting in dressing the wounded. I was engaged in the hospital over Saturday night and during Sunday.

The hospital was furnished with abundant supplies of hospital stores, food tents, etc. Much difficulty occurred for want of laborers and few tents were pitched. Many of the wounded were obliged to lie on the ground exposed to a cold rain which fell on Saturday night and Sunday.

Surgeon C. F. H. Campbell, U. S. Vols., of Hatch's Brigade, King's Division, says:

The corps of medical officers at this hospital was so small that the principal labor of operating, dressing, etc., devolved upon myself and three other medical officers. For three days and nights we worked almost incessantly. The wounded were literally crowded in upon us. Our medical and hospital supplies proved ample. It was at this time especially that the new medical wagon (Autenreith) was so thoroughly tested, and found of invaluable service to us.

Twelve to fifteen hundred wounded were brought in to the Bull Run hospital. All the houses on the field, the Chinn House, the Lewis House, and all up to Centreville were filled with wounded; but when in the growing darkness the columns defiled across the

Stone Bridge, several thousand remained scattered over the hills and through the woods.

At six on Saturday McParlin received a telegram stating that 150 ambulances with 37 supply wagons had left Washington at 5 o'clock. Medical Inspector Coolidge, U. S. A., had been assigned to duty as principal medical officer of all troops west of the Potomac. He left Washington at midnight and was at Centreville by six o'clock Sunday morning. The battle was then over.

McParlin made the same mistake here that he censured his assistants for at Culpepper; he forgot to evacuate his wounded to the rear. Up to Sunday noon not more than fifty or sixty wounded had reached Fairfax Station, the nearest railway station; and they were officers and others who reached there casually. A wound appears to have been sufficient authority for an officer to not only leave the field, but to go on to Washington, to his home, or wherever he pleased.

About 200 wounded reached Alexandria on the 29th, probably from the earlier engagements. One railway train brought in 125 of the Warrenton patients. They had been loaded in wagons at Bristoe and hauled across the break in the railway to a train at Fairfax.

SUBSEQUENT EVENTS.

On Sunday morning (August 31st) all the divisions were gathered on the heights of Centreville, reinforced by the Corps of Sumner and Franklin from Alexandria. On that day both armies were exhausted and did little. Medical Inspector Coolidge took over the duties of his office at once and proceeded to immediate action. He began to move the whole hospital establishment from Bull Run to the nearest railway point, Fairfax Station, where there were stores and empty trains returning to Alexandria. Medical Inspector Vollum reported that the number of wounded received was 1,200. They reached Washington that evening. As the whole number of wounded was reported as 8,452, and was probably greater, it appears that even after deducting all those who escaped unaided there were three thousand or more wounded still on the field.

Many wounded had found their way to Centreville; all the buildings in the town and along the road were full of them. One

hundred were in the little church. These were also to be evacuated to the Station; the ambulances to return.

Coolidge was unable to do anything for the wounded at Manassas and Bristoe. However, Medical Director Antisell of Banks' Corps cleared out the sick and wounded there. Banks was directed to "remove all sick and wounded by wagons, even if it necessitates the destruction of much baggage and regimental property." He had been ordered to destroy all property that he could not bring off, and move to Centreville, which he did on the 31st, burning 150 cars and 300 wagons, unnecessarily.

Surgeon Antisell tells how he found 550 wounded in a train at Kettle Run (from Warrenton, and Hooker's Fight) and two hundred sick (probably from McDowell's and Porter's Corps) in some houses in the vicinity; also forty sick at Bristoe.

The troops marching to battle had been obliged to leave their sick on the road at every station and in almost every house. They were all picked up. When Banks left Manassas he left behind a few untransportable cases and 200 wounded Confederates. His sick and wounded were loaded in wagons and started on to Alexandria while he destroyed all the public property and marched by way of Brentsville to join the army at Centreville. He reported that he brought 277 wagons loaded with sick and wounded into Fairfax Station on Sunday. Several hundred reached Alexandria in ambulances that day.

These things being attended to, Medical Director Coolidge says:

I went to General Pope and stated that I had been informed that a large number of our wounded were still lying on the battlefield and requested that he would apply for a flag of truce that they might be removed. The General made the application immediately. The reply was communicated too late to proceed that night (Sunday). I, however, directed Medical Director McParlin to have his ambulances ready and to procure from regiments, brigades, and divisions the necessary detail of surgeons and assistants; the whole to move at six o'clock on Monday morning. I also directed Surgeon Page and most of the medical officers sent out from the city to accompany him.

The train of 150 ambulances and 37 supply wagons despatched by the Surgeon General at 5 o'clock Saturday evening arrived at Centreville late Sunday night. Surgeon Charles Page was in charge of this ambulance train.

In the later editions of the Washington papers of Saturday this notice appeared:

SURGEONS AND NURSES WANTED.

There is pressing need for the services of surgeons and nurses (male) to attend to the wounded of the great battles that have taken place recently. We are requested by the War Department to call for such Volunteers from this point to repair at once to Alexandria, prepared to stay near the scene of action for some days at least. On reaching Alexandria they will find at the railroad depot provisions made for their prompt transmission to point where their services may be needed.

This notice was given out by the Secretary of War, but probably on request of the Surgeon General.

There was a general response to the call and about a thousand clerks and other civilians were at Alexandria for the train that evening. They were packed in box cars and the train did not leave until nine. Then the engine was weak and had to take the train up every grade by sections, so that Fairfax was not reached until six on Sunday morning. When this motley crew (Haupt reported that many were drunk) reached Fairfax they found that no provision had been made for transporting them to the field, twelve to fifteen miles away. Some started forward on foot but were stopped by the guard. They telegraphed to Washington asking what to do and were advised to return, which they did. A few stayed and soon had plenty of work, for that day the wounded were removed from Bull Run to Fairfax; where some of the volunteers rendered real aid.

This party should at least have been placed in charge of a reliable officer, with passes and transportation from Fairfax.

The call for help also brought twelve hundred surgeons from the nearby states. When they reached Washington they found that their services were not needed, so they asked the War Department for transportation back to their homes.

Chaplain Alonzo Quint of the 2nd Massachusetts was at Fairfax Station on Sunday morning and has described the scene there when the wounded were being brought in from Bull Run.

I joined a long, long train of ambulances, reached Fairfax Courthouse and then Fairfax Station. The sight there cannot be described. The floors of cars and the roofs were covered. Acres of ground were strewn with the wounded men. Train after train had gone, still the ambulances

came on. All night the shriek of the whistle broke the hours of the Sabbath, and morning showed loaded trains still. The wounded were as well cared for as possible, lying upon hay and attended by surgeons. It was sprinkling just enough to make it pleasant. Monday morning I went back to the Court House and on to Alexandria. Still the long trains of ambulances were on the road. The eye wearied, the heart grew faint in seeing them. I was appealed to for water. * * * Every ambulance then used had two kegs for water. I examined them and found that in those long trains, moving a score of miles, there was not a drop of water in the kegs. I am happy to say that in our division such a fact would court-martial somebody. I saw no disorder.

These ambulances that the Chaplain saw were doubtless from Washington, with drivers picked up from the streets. It was the engineers under Haupt who, without guard, advanced to Fairfax Station and brought off the wounded.

Haupt protested against sending the crowd of volunteer nurses and shipped them back as soon as he could. From his dispatches he appears to have had the most accurate insight and the best judgment of any one concerned in the happenings of those eventful days.

On Monday Medical Director Coolidge sent all his available personnel and ambulances to the battlefield. The supplies were unloaded at Centreville, only a small portion being sent on in ambulances. The ambulance drivers were negroes and the riff-raff of the streets of Washington. When they reached the field, now held by the Confederates, they were stampeded by some cavalry and started pell mell for Washington. It was with difficulty that they were restrained. The ambulances and other vehicles were loaded and this train, following the Little River Pike, reached Washington on Tuesday. That day's paper said: "A train of five or six hundred wounded from Fairfax arrived in Washington this morning. They were more severely wounded than those arriving previously." These wounded had been left on the field. The others mentioned had contrived to get away.

The first wounded to arrive in Washington were officers, who were able to command transportation, by hire or otherwise. They seem to have gone to hotels rather than to hospitals. General Schenck, who was shot through the wrist on Saturday, reached Willard's hotel at seven on Sunday morning; and a number of other wounded officers came in that day; also some enlisted men a little later.

Medical Director McParlin went to the battlefield on Monday and selected the peach grove at J. Dogan's house, east of Groveton, as the most central place for collecting the wounded.

There were many wounded lying in houses along the road, but he thought it better to first collect those left scattered, helpless and exposed to the weather. Medical Director Guild of General Lee's Army joined him and arrangements were made for paroling. The wounded as fast as paroled were sent to Centreville. Couriers were sent back for subsistence and forage, but it was with great difficulty that any could be obtained.

The Surgeon General's force was working until midnight on Saturday getting another force of surgeons; with wagons and vehicles for bringing in the wounded.

As all available ambulances had already been sent out, the Surgeon General called on the Provost Marshal to gather up vehicles wherever he could find them on the streets. Monday's *Star* described this action as follows:

Saturday night the military authorities commenced to impress all the public hacks, wagons, etc., into service, to be used under the direction of the medical director, in moving the wounded to the hospitals, and yesterday large numbers of them were in service near Centerville bringing in the sick and wounded. Many of the drivers, when night came on, came back to the city, and this morning, with others who had escaped being impressed previously, made their appearance on their stands on the avenue. As soon, however, as one made its appearance, a soldier took possession of the vehicle, drivers and all, and escorted them to the medical director's office, where their numbers and the names of the drivers were taken, and they were organized into trains. This morning all the omnibuses (the old Georgetown line and the present Navy Yard line) were taken possession of, and are now employed in the service of the government. The Western market was the scene of some fun when the seizure was made there Saturday night, the first intimation the butchers and hucksters had of it, being a strong guard who surrounded the market house and then made the wishes of Uncle Samuel known. Some with a good grace acceded to the demand; but others, who had their pots and kettles and unsold merchandise to take home, kicked against it, but it was of no use, for go they must.

The absence of so many vehicles from Washington on Monday made it necessary to impress other hacks and wagons for use in removing patients from the incoming boats and trains to the various hospitals in the city.

The story of this train of hacks is worth telling.



This train numbered two hundred vehicles and carried volunteer surgeons and nurses; a gentleman who accompanied it has related its story. Some of the hacks were such miserable old vehicles that they would certainly break down on those terrible roads; the horses had been in use all day and were in no condition to go fifty miles without feed. In one hack some good Samaritan had placed a quantity of liquor for the wounded; it was soon found by the drivers.

The procession started at nine Saturday night, in charge of a lieutenant of the provost guard, and escorted by some cavalry. The hacks rattled along amid the shouts and imprecations of the drivers, already feeling the influence of stimulants. Proceeding by the Aqueduct Bridge and Falls Church, the column soon broke up into fragments, and the cavalry disappeared in the darkness.

Many hacks got off the road and found their way around by Alexandria back to the city. Some of the volunteer nurses induced other drivers to return.

About daybreak on Sunday Fairfax Courthouse was reached, in a heavy rain. The road from here on was filled with troops, artillery, wagons, ambulances, and stragglers. When the column struggled up the Centreville hill there remained but sixteen of the vehicles that had started. Some had broken down, the horses of others had given out, many had escaped from the line and returned to Washington. It was decided not to go to the battlefield, there being no authority as yet. So they went to the field hospital on Bull Run, loaded up with wounded there, and returned to Washington on Monday.

A number of surgeons and nurses who went with the party remained and were of real service. The train was a failure because it had no efficient management.

The supplies from Washington had been unloaded at Centreville, but all the ambulances and wagons were busy hauling patients; and as the Medical Department had no separate transportation these supplies could only be taken to the field in dribbles. Besides they were needed at Centreville, where there were wounded.

The ambulances caused endless trouble; they seem to have been under no control. Those sent to Fairfax Station did not return. Those coming from Washington when once loaded re-

turned to Washington. All went off with one load of wounded and disappeared, not to return.

A civilian from Washington, Horace H. Thomas, was one of the volunteer nurses who succeeded in reaching Centreville and accompanied the flag of truce party to the field. He says:

The Medical Director established headquarters near the Stone House and divided us civilians into squads of eight, with two stretchers to each ambulance; and we entered at once on the mournful task of gathering up our poor fellows from the wide battlefield. This work we pursued day and night with unflagging energy for the next 24 hours. Some of them had lain 48 hours where they had fallen, without any attention, or anything to eat or drink, unless they were fortunate enough to have a haversack or canteen not quite empty. The dead were unburied and presented a study of ghastly interest. Contrary to my anticipations, most of their faces wore a peaceful expression. * * * I saw hardly a decent pair of pantaloons, a blouse, or a pair of shoes on a dead man. * * *

Before noon of September 2nd, having filled all our ambulances and other vehicles with wounded officers and soldiers, many of whom had undergone the amputation of an arm or leg, we started on the return trip to Washington, accompanied by four or five hundred slightly wounded soldiers who had been paroled.

On reaching Centreville the whole party was made prisoners; but allowed to go and present their case to General Jackson, who was several miles away.

The General received them kindly, ordered their release, and the procession reached Centreville again at three next morning. At Fairfax next day they were again held up by Fitzhugh Lee, who happened to be in an ill humor. By some smooth flattery they secured a pass from him in his own writing. "Pass these paroled prisoners, and citizens who accompany them, on their way rejoicing to Washington. Fitzhugh Lee, Brigadier General, Commanding." They went on by Falls Church and reached Washington Wednesday night.

On Monday afternoon, September 1st, the Army evacuated Centreville without notice to the Medical Director. In fact, Coolidge says that Pope gave him misleading information. During that evening the first train of ambulances from the battlefield arrived; the wounded were fed, furnished with blankets, and sent on their way as comfortably as possible. Next morning the Confederates occupied the place.

Surgeon Coolidge wisely decided to neither send back his hospital stores nor destroy them. That morning he received a

requisition from McParlin for rations for 1500 men, with a note describing the destitute condition of the battlefield. Application was made to General Lee for permission to send ambulances and supplies, but the reply as to supplies was unsatisfactory.

In all the statements regarding the care of the wounded on the field it will be noticed that the reports of medical directors are much more optimistic than the accounts of civilians, soldiers, subordinate officers and others. As the medical director saw a certain hospital, supplies were plentiful and everything satisfactory. So it may have been to him, he really saw but little of it. But to the assistant surgeon who worked there two or three days and nights, or to the sanitary agent, there was lack of almost everything needful, with great and unnecessary suffering of the wounded. The truth lies somewhere between, but is probably nearer the accounts of subordinate officers. Medical directors were prone to see everything *en beaux*, while civilians and soldiers are notoriously given to exaggerating suffering and want.

Dr. W. W. Keen, then a medical officer, has given some of the most readable reminiscences of the events following this battle.

I was sent out from Washington to Pope's Army with a large supply train. My supply train was shelled for a short time from a parallel road at some distance to the north of us (Ox Hill or Chantilly) by a Confederate battery, which seemed to me odd, in view of Pope's proclaimed victory (of Friday). However, I finally reached Centreville (Monday morning) and soon afterwards began to distribute the instruments, blankets, medicines, stimulants, etc., I had brought. I had 400 dozen bottles of whiskey, brandy, sherry, etc., 2600 blankets, 600 cases of soups in cans (one of the few things then put up in cans), 800 suits of underclothes, a dozen operating cases, etc.

Before I left Washington I had been directed to be rather sparing in distributing these, and I obeyed orders; but afterwards I had good reason to regret my want of liberality, for on the third day Colonel Flournoy of the Sixth Virginia Cavalry marched in and took a hand in the game.

He was accompanied by one of the surgeons of Lee's army, whose name unfortunately I do not remember; but I have a very vivid recollection—when I gave them the key of the little smoke house in which I had stored the stimulants and more valuable things—how their eyes widened and their faces were wreathed in smiles as the doctor, after a rapid survey of the boxes on the walls, turned to the colonel and said with an expletive: "There is more good whiskey in this little store house than there is in the whole city of Richmond." (The amount of liquor supplied to the Medical Department in those days was enormous.)

The army left, and left me practically stranded. I was not attached to any organization and nobody gave me any orders; but as I found in the little church in Centreville one hundred wounded men who needed attention, I saw my duty well marked out. All these men were severely wounded, for the slightly wounded marched away with the army. Upon a few mattresses, and with almost no other conveniences or comforts, the men were laid in rows upon the floor. Most of them had, in fact, not even a mattress, but only a little straw under them, and this in a very little time, when "laudable pus" began to flow, became soiled and had to be diminished daily. The bedsores which followed were something frightful, often larger than an entire hand; and when we add to all this the secondary hemorrhages, which often soaked the floor before they could be arrested, one can have an idea of the sufferings of these poor fellows, and of the task of those who were caring for them. * * *

The third day after the battle (probably Monday night) I passed such a night as I had never before experienced in my life. Long trains of ambulances arrived, carrying wounded from the field of battle back to Washington, and there were but four surgeons to look after them and their many imperious needs. Fifty poor thirsty fellows were crying for water; fifty more were crying with the pain from a jolting ride of nine miles over a corduroy (?) road. Most of them had had nothing to eat for one, two, or three days, save what they had obtained from haversacks of the dead.

Some had such horrible wounds that they could absolutely go no further and must be got out and taken into the hospital. * * * I took a bottle of morphine and my pocket knife (there were no hypodermics then) and did not worry over any superfluous exactitude in doling out the blessed relief which morphine brings to men in pain. All this was done in total darkness, with two or three dim lanterns, in a drizzling rain, and in six inches of Virginia mud.

Fortunately just as our food was giving out, an ambulance train arrived and took our patients and ourselves back to civilized conditions and surgical opportunities.

On the evening of September 1st, just at darkness in a driving rain, there was another fierce encounter a short distance up the Little River Pike from Fairfax Courthouse. Some divisions of Reno's and Heintzleman's Corps struck Stonewall Jackson's advance and succeeded in halting it, though with a loss of Generals Kearney, Stevens, and more than a thousand killed and wounded.

This night was one long remembered by everyone taking part in the gloomy drama then enacted. The rain that had drizzled throughout the day turned to a violent storm at dark. The veterans of Jackson's Corps complained bitterly of the driving

rain that spoiled their cartridges and beat them back as they strove to advance through the dark and dripping forest.

An officer of Banks Corps, marching by the old Braddock Road, relates how the fury of the storm almost swept the column from the road; and when they reached Fairfax Station at midnight the rain had converted the low ground into marshes, in which the weary, bedraggled soldiers sank to a miserable bivouac. If it was so depressing physically and mentally to men still sound and well what added degrees of wretchedness must it not have brought to the thousands of wounded still lying scattered over the battlefield; unsheltered, uncared for, alone?

Finally, on September 3rd, Medical Director Coolidge himself went to the field, where the wounded had been mostly collected in and around houses, but some were still merely in groups in the fields, with no shelter except blankets. There were but two groups, of 30 each, without surgeons. Coolidge says:

After my arrival only four of our wounded were found completely isolated and without attendance. (This was five days after the first day's battle.) None had been absolutely without food, though the amount was extremely limited. In some cases the surgeons had succeeded in procuring a sheep or a pig and some corn meal; and in one place, the Van Pelt House, they found coffee, sugar, wine, and cider, and were able to procure meat. (There were 196 wounded men at the Van Pelt House.) Although doubtful of the propriety of so doing, I passed the night with Medical Director Guild (of General Lee's Army) at his camp on the battlefield.

On Thursday (September 4th) the first train of ambulances (2nd) from this city arrived on the field with fresh bread and an abundant and varied supply of food and hospital stores. I immediately dispatched the ambulances with provisions in every direction over the field, and to bring to the central station all who were without shelter. From that moment trains of ambulances, each with medicines, food and stores, arrived in rapid succession.

When Surgeon Coolidge says "first train from Washington" he evidently means the first train after his arrival on the field. Other trains had reached the battlefield two days previously. After Coolidge's arrival he sent a telegram to the Surgeon General, informing him of the situation and requesting that food, forage and 300 ambulances be sent at once. The Surgeon General had no 300 ambulances to send. The Army was marching into Maryland for a new campaign and Letterman was calling loudly for hundreds of ambulances.

Supplies were made ready and the cab-drivers were again rounded up and sent to the field. It is interesting to learn just what such a measure actually accomplished. Here it is:

Report of Assistant Surgeon J. J. Woodward, U. S. Army:

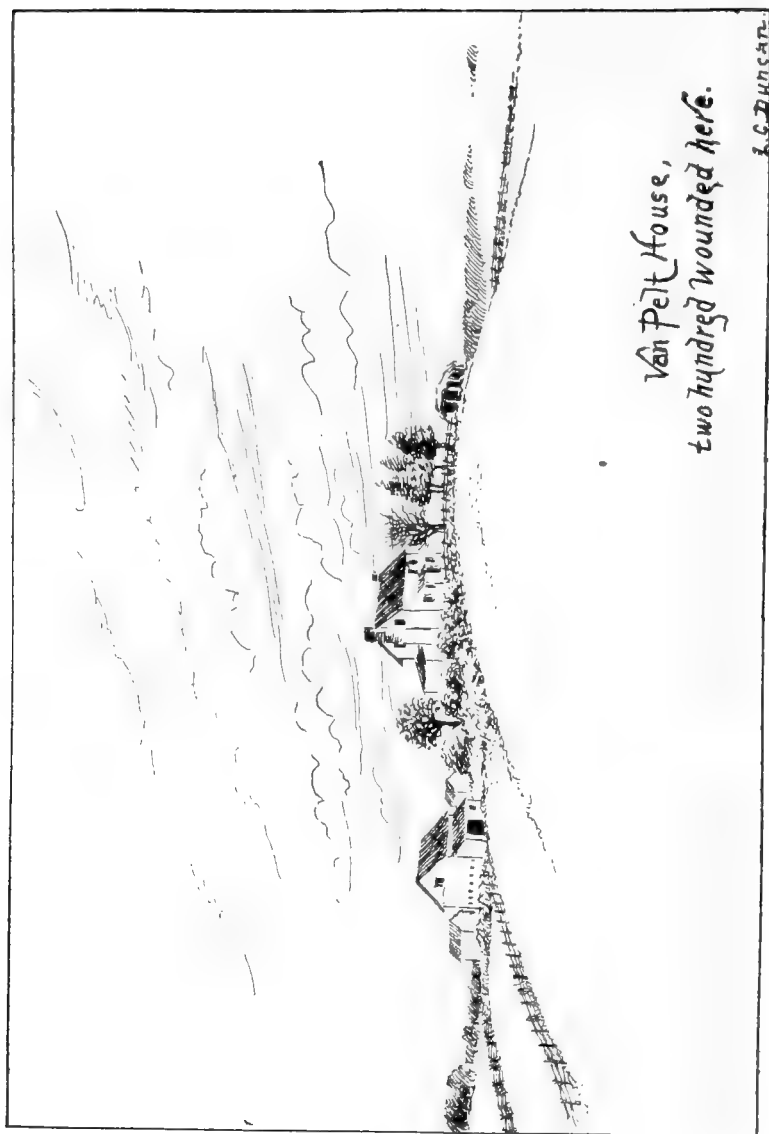
"On the afternoon of Thursday, September 4th, I was requested by the Surgeon General to collect and take charge of such hacks, omnibuses and other vehicles as could be collected in the City of Washington, and to proceed with them to Centreville for the relief of the wounded. The vehicles having been collected by a company of cavalry, a few army wagons loaded with cooked provisions and other supplies were added, and we set out about 1 o'clock Thursday night; the train consisting of about one hundred hacks, forty ambulances, wagons and other vehicles. We arrived at Centreville about noon next day (Friday), and having been permitted to pass by the Confederate officer in command, reached the orchard (at the Dogan house, east of Groveton), where most of the wounded were congregated, the same afternoon. During the following day (Saturday, 6th), the train was loaded with wounded, some six or seven hundred in number, and reached Washington about daybreak Sunday morning."

It appears that a train like this could be used to make one trip out and back, if properly managed, but could not be depended on for anything more.

An amusing incident occurred a few nights later: The hack drivers, having been twice impressed for these long night rides, with danger of accident and loss of business, had become nervous and easily alarmed. Some wag who had a score to settle with the hackmen caused it to be whispered around one evening that they were about to be called out again. In a few moments the stands in front of Willard's, Kirkwood's, Brown's, and the National were deserted, the hacks and carriages disappearing towards the suburbs in a cloud of dust, with much cracking of whips and many oaths.

Surgeon B. Howard, U. S. Army, who accompanied McParlin to the battlefield on Monday, does not agree with him as to the wounded not being without food. He says:

A peach orchard (J. Dogan's) on the right of the turnpike was made the rendezvous, whither the surgeons were directed to bring the wounded. Many surgeons, however, in charge of ambulance trains, when loaded, proceeded to Centreville. This caused a scarcity of ambulances and of surgeons, so that operators could not get assistants and had to rely on non-professional help in the most difficult operations. The battle began



on the 28th and continued until the evening of the 30th. All the wounded were not brought in (to the peach orchard) until the 6th of September. Some of them stated that they had received no food, drink nor assistance from the time they fell until brought off by the ambulances, going a mean of four and a half days without food.

On the evening of Tuesday there arose very heavy thunder storms which were repeated the next two days, drenching the wounded. Of those brought to the peach orchard, with few exceptions, all were submitted to the necessary operations before being removed further.

On September 3rd there were about 3,000 wounded men on the field, but still no food, everybody suffering from hunger, and although constantly operating, I had only a little brandy and sugar. Shortly after a train of ambulances arrived. Supplies of every sort now abounded, and all the remaining wounded were conveyed in ambulances to Washington on Saturday and Monday, September 6th and 8th.

Surgeon A. H. Smith, U. S. Army, of Rickett's Division, also went back to the field on Monday morning. He says that the ambulances, 200 in number, took but a portion of the wounded and did not return until Thursday. It rained heavily just at dark (on Monday), followed by a cold wind. He and Surgeon Shackelford of the 94th New York went to where their brigades had been engaged and collected sixty or seventy of their wounded. They spent the night in carrying rails to build fires and in distributing soups, brandy and supplies. Next day there was no food, but they happened to have tea and managed to find a camp kettle. The greatest difficulty experienced by all medical men was to find food and blankets.

B. B. Emery, one of the volunteer nurses, says that on Wednesday they found a group of 25 or 30 wounded who had had no food or drink since Saturday, the nurses could not get a bite to eat from Monday to Wednesday, and many of the wounded died from starvation. Another nurse says he lived four days "on corn and apples like the rebels."

The removal of wounded from the field was completed on Tuesday afternoon, September 9th. The last train of ambulances reached Fairfax Seminary Hospital on Wednesday Morning, September 10th, with 142 wounded, twelve days after the first days' fight. On the ninth a train of fifty-two ambulances went out, but could not find a single wounded man.

On Saturday, September 6th, the 139th Pennsylvania Volunteers was sent to the field under a flag of truce and began bury-

ing the dead. Although the Confederates had buried some, there were many bodies unburied. Most of these were not identified. As many persons came to the field later trying to find the bodies of friends or relatives, the Washington papers published a notice saying that identification was impossible.

NOTICE.

Our dead there were necessarily buried in trenches containing from one to three hundred corpses each, and by persons unable to identify one of them. In some few cases they were identified, a stake marked with a pencil with the name of the deceased directs where his remains may be found.

These things are of interest to those who think that after a great battle all the minutiae of an elaborate system of identification of the dead and preservation of their property may be carried out. As late as September 23 a force was sent to the battlefield to bury dead still lying scattered about.

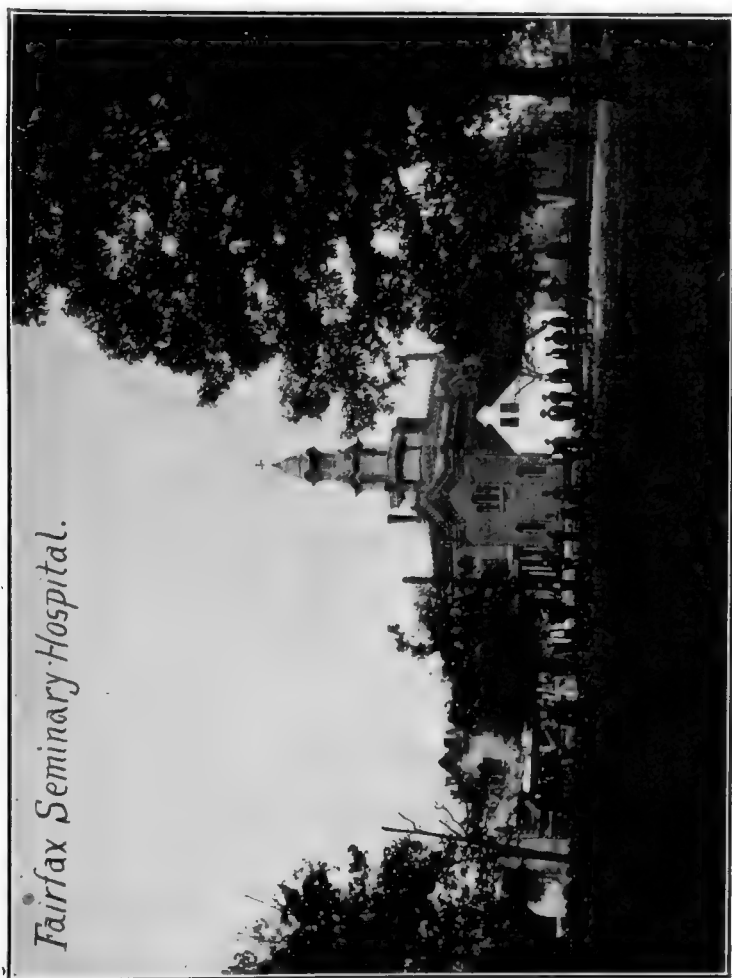
While a part of the wounded were carried to Fairfax Station and from there by train, the railway was a poor one and could not carry all. A paper of September 2nd said:

During last night three trains of cars came into the Maryland Avenue station, one loaded with wounded and two bringing sick from the Falls Church hospital, which has been broken up. Arriving in the dead of night, in a pouring rain, and with many of the sufferers exposed to the full fury of the storm in open cars, they had a hard time of it.

On September 4th the Surgeon General gave out the first estimate of wounded, the number of which he placed at 4592. He supposed that 1800 still remained on the field. Later it was estimated that the number of wounded received in the hospitals of Alexandria and Washington was approximately 6000. As the whole number of wounded from August 27th to September 1st was reported to be about 8500, the remainder must have been mortal or slight wounds.

Surgeon Brinton has described how the wounded reached Washington.

Those who were injured in the earlier battles were transported from Fairfax Station to the metropolitan hospitals in ordinary freight cars, in most cases provided with straw, and oftentimes with cots. These wounded were consequently received in a condition which compared most favorably with that of their less fortunate comrades, who under-



went the tortures of exposure on the field, starvation, and subsequent removal in jolting ambulances.

The horrors of transportation over twenty-five miles of rough country can scarcely be described, and will never be forgotten by those whose painful duty it was to witness it.

There were no "untransportable cases" on those fields. All the survivors were brought away, regardless of wounds or roads. It seems that under the terrible strain of those days the strongest

men lost their judgment. The smoke of the tremendous battles filled their brains, and they lost their usual faculties. The fates seemed against them, and they appear now to have acted with a dogged indifference to consequences.

A last glimpse of the road to the rear: On Monday morning the correspondent of the *New York Tribune* left Alexandria for the front. The army was falling back on Washington.

For the next ten miles the road was filled with the trains of every corps, everywhere crowded, and frequently halting. * * * Mingled with the trains was a great number of ambulances and carriages filled with wounded and dying men. They had been all day long on the road, a day of confinement, privation, discomfort and torture. Many must have remained all night on the road; many also in wagons, which as carriages for the wounded are only one degree worse than ambulances.

Some of these may have been Surgeon Heard's ambulances which started from near Thoroughfare Gap on Thursday.

Medical Director Coolidge concludes his report as follows:

Our wounded were collected in 21 field hospitals within an area ten miles long by seven wide. It was impossible to ascertain with precision the number of wounded, but I estimate it to be four thousand (left on the field). * * * I cannot close this report without commenting on the conduct of the ambulance drivers. It was with greatest difficulty that I could put a reasonable limit to their stealing from my commissary and hospital stores. * * * Some would appropriate to their own use the hospital blankets and be highly insolent when they were taken away for the wounded.

Very few would assist in placing the wounded in the ambulances; still fewer could be induced to assist in feeding them or giving them water. Some were drunk, many were insubordinate, others when detected in possession of stores would not give them up until compelled to do so by force. * * * The practice of loading ambulances with forage, camp kettles, personal baggage and subsistence for the drivers needs correction. * * * A wagon with stores and forage should accompany every train of fifty ambulances (we now think twelve necessary) and nothing but sick and wounded men and water should be put in the vehicles themselves. The service greatly needs a well-organized ambulance corps, and I hope the Secretary of War will adopt the organization you have recommended. (The Letterman plan.)

McParlin spoke in the same line:

Thousands were wounded and all the transportation at our disposal was inadequate. At such a time a well organized, regularly established ambulance corps would have been a blessing. * * * If the Medical

Department must transport its wounded let it at least be done systematically, as in the armies of Europe. A permanent ambulance corps once established can have its duties in action and at all other times defined by regulations.

These reports and the many accounts of the sufferings of the wounded in this battle led the Surgeon General to recommend that the Letterman system be at once put in use in all the armies. Unfortunately, General Halleck did not approve it for another year. As the armies operating against Richmond were united, this made no particular difference.

The Western armies, as a rule, already had a brigade ambulance and field hospital system, and they adopted the Letterman system when the campaign began the next spring. Only one battle was fought in the meantime, Stone's River.

When these thousands of wounded reached Washington they exceeded the hospital capacity, which was not nearly so great then as it became later. New hospitals had not been built, buildings of every kind being still used for hospital purposes. A paper of that time said:

This sudden arrival of so many wounded soldiers overtaxed the hospital facilities of Washington; some of the men brought in from Centerville, who could not gain admission to the hospitals, were taken to the city hall, where they were provided with cots and blankets. Surgeon Campbell, medical director in charge of this military district, issued an order Sunday, August 31, published in *The Star* the next day, calling upon all persons willing to receive convalescent soldiers into their homes from the hospitals to make room for those wounded in the recent battles, to notify his office of their names, etc. So great was the pressure for hospital room that the prisoners in the Georgetown prison were removed under guard to the old Capitol prison and central guardhouse in order that the building might be used for hospital purposes.

The Patent Office had been turned into a hospital, and even the Capitol was prepared for patients. Cots were placed in the rotunda, the senate and representative halls, and the corridors, and wherever there was room for them. Three thousand sick and wounded were sent North to make room for the new arrivals. The supply of lint was about exhausted. On Saturday, August 30th, Surgeon General Hammond had the following notice published in the evening papers:

AN APPEAL.

To the Loyal Women and Children of the United States:

The supply of lint in the market is nearly exhausted. The brave men wounded in the defence of their country will soon be in need of it. I appeal to you to come to our aid, etc., etc.

WILLIAM H. HAMMOND,
Surgeon General.

Calling on the children strikes one as unusual, but was wise. A nation at war can neglect no resource.

About the same time the Provost General ordered that no spirituous liquors should be sold at retail within the limits of the District and that the Provost Marshal should seize and turn over to the Surgeon General all liquors found in retail stores.

If some of the measures of the Surgeon General were not well considered or were poorly carried out, it is certain that he was resourceful and energetic in this the greatest emergency of the war.

Although the cannonade at Bull Run was plainly heard in Washington and many professed to smell the burning gunpowder, there was no panic.

COMMENTS.

A study of the whole campaign brings out little that can be held up as an example to be imitated. It shows very much to be avoided, if possible. There are many who believe that such conditions could not obtain and such results could not occur again in our armies. I am not one of them. They can occur and would occur if we should be hurried into war with a great power.

This battle took place sixteen months after the war began; preparation could be made and staff departments organized much more rapidly to-day, but the Franco-Prussian War was decided within six weeks. Could a complete medical staff be organized and equipped in six weeks, or in twelve weeks?

In spite of the fact that this campaign was a miserable failure from almost every point of view, it affords as valuable lessons as any of the war.

The mistakes and shortcomings of the Medical Department, the awful suffering following the battle, were a convincing object lesson to the medical officers on the field, to the Surgeon General,

and to everyone cognizant of them. After the lapse of fifty years they remain the most terrible example in all our history of suffering on the battlefield. Yet there was a sufficient number of medical officers, and they did their duty as they saw it, fully and bravely.

The general conduct of the Medical Department was good up to the great battles; at Cedar Mountain it was exceptionally good. As long as the army was in camp, on the march, or even engaged in minor combats, the medical service was satisfactory. But the one field hospital was only sufficient for one corps, and there were six; but one was engaged at Cedar Mountain. When the great battles came and five corps were engaged it was like the outbreak of fire in a Filipino village, where everyone comes running with whatever he can grab up, and every means is used, in confusion and with little effect.

Witness the hasty sweeping up of vehicles from the streets, and their departure without adequate control; the hurried assembly of surgeons and nurses; the desperate efforts to secure food for the wounded; the improvisation of hospitals in churches, and even in the Capitol. These things were all done in haste, without preconceived method or plan, because no adequate measures had been adopted for handling the wounded from a great battle. It will also be observed that they were done by the Surgeon General himself, or his personal representatives. Had the whole field of operations been organized this should have been unnecessary. A medical officer in charge of the base would have had ten thousand beds ready, with personnel and supplies. Another, in charge of the short line of communications, should have been prepared to transport two thousand wounded or more every twenty-four hours. He would have given notice when the trains were ready and when they would arrive in Alexandria or Washington.

As for the service of the front, there were sufficient officers had they been organized; McParlin says there were 273 in the three original corps; say one to each 150 men. Each regiment (about 450 men) had three surgeons, one for the firing line, as was the custom, and two for the field hospitals.

This gave some twenty or twenty-five officers for each division field hospital. During the latter part of the war these hospitals were managed in a satisfactory manner with from twelve to

fifteen officers. The corps and divisions of those days correspond in numbers to the divisions and brigades of to-day.

Ambulances were inadequate in number and had little organization, or even control. The manner in which the ambulance drivers acted is astounding. It appears that they were mostly hired drivers, which shows the value of a service corps; and of having every man with a mobile army under complete military control, which is only possible when he is an enlisted soldier. Furthermore, an enlisted corps of any kind develops a pride in its work and a sense of loyalty to duty which the hired civilian seldom has. The work of the ambulances was about as bad as it could be. But sweet are the uses of adversity. No stronger argument for an ambulance corps could be advanced than the outrageous and despicable action of the ambulance drivers in this battle.

The system of supplies was not quite so bad as the rest. The railway train of reserve supplies was an excellent idea, and one that will probably be adopted in the future, with an army advancing along a line of railway. To complete the supply system, however, there should have been a small wagon train for each corps, to run between the railhead and the corps camp. These corps equalled our modern divisions and six wagons would have been sufficient. The army was never more than a day's march from the railway, seldom so far. The nearness to the base was properly relied on as making the amount of supplies to be carried much less than when operating at a greater distance. In the Chickamauga Campaign each corps had a supply train of from eleven to fourteen wagons. The Autenreith medicine wagon was first thoroughly tried out in this campaign. At the beginning they were top-heavy, upsetting and getting smashed on every bad piece of road. This fault was remedied and by the end of the operations every medical officer was praising this type of wagon as a sort of Pandora's box, from which all good and necessary things for the field hospital could be quickly drawn.

McParlin's system of field hospitals was not a success. One great field hospital could not accommodate an army of sixty thousand men in battle. Bull Run was the proper location, but there should have been hospitals behind each bridge and ford, particularly the Stone bridge. His general field hospital was greatly deficient in personnel. The surgeons near the front, at

the various advance hospitals, having been instructed to send their wounded to the main hospital, doubtless did so without hesitation; their establishments thus becoming dressing stations rather than hospitals; but they remained at the front, leaving the main hospital undermanned. The loss of the field did not embarrass the work of the hospital; rather made it simpler, for the time being.

An actual clearing hospital was maintained at Culpepper, and later at Warrenton. When the troops reached Bull Run McParlin seems to have thought the army so near its base that such a hospital was no longer necessary, and converted this hospital into a field hospital. This was a mistake. The distance was more than a day's march, practically two; and the railway was still in operation. When the army was at Bull Run on August 28th, and the railway broken for several miles, a clearing hospital should have been immediately established at the first station east of the break—Fairfax. That was the first thing Coolidge did when he arrived on the 31st. It is true that the ambulances were all busy at the front, but there were wagons returning, and there are always hundreds who can walk. They could have been directed to one point instead of scattering in all directions, and taking ambulances off to Alexandria and Washington.

This clearing hospital under the circumstances would have been rather nominal as a hospital; some hay to lie on, with food and attendants. The main idea should have been to get the wounded to the rear, with an economical use of the insufficient transportation. As it was, ambulances were going all the way to the Potomac while trains were covering the same route. With a clearing hospital for 1500 or 2000 at Fairfax Station and field hospitals behind the fords; with ambulances held at the front and railway trains utilized in the rear; a very large number of the wounded could have been collected and sent to the rear before the railway was abandoned—September 2nd.

In any case, hundreds of wounded must have been left on the field. As Billings observed at Chancellorsville, it is one thing to take up and care for wounded when the troops are successful and moving forward: it is quite another thing to bring them off when the troops are losing ground. Also, when troops make a strong assault and penetrate the enemy's lines, only to be driven out again, as was the fate of Grover's, Hatch's and other

brigades, many of the wounded will unavoidably be left behind. The same thing occurred later at Cold Harbor, when there was an excellent ambulance organization.

Neither in this nor other campaigns was any medical officer assigned to the line of communications. The chief medical officer at the front sent medical officers with the trains when he could spare them. McParlin did have medical officers and attendants with supplies at the point of entrainment, a place where the wounded were only too often neglected. The railway during the campaign was under the sole control of Colonel Haupt of the Engineer Corps, subject only to the orders of General Halleck. But for Haupt's tireless energy there would have been no trains at Fairfax; the indifferent generals at Alexandria would not even furnish him a guard.

McParlin allowed his wounded to pile up at Bull Run, forgetting to evacuate them; Coolidge moved the hospital to the Station, but also seems to have been in no hurry to move the wounded further; it was Haupt who hurried them on to Washington.

Manassas and Chickamauga were similar battles in many respects, especially in numbers engaged, losses, and outcome. At Manassas there was practically no organization, either of ambulances or field hospitals; about twice as many wounded were left on the field as at Chickamauga, where natural conditions were more unfavorable, but there was a fair medical organization. But while at Chickamauga surgeons, attendants, tents, and some supplies were left with the wounded, at Manassas they were, for the most part, left helpless and alone. Not even at First Bull Run were the wounded so entirely abandoned, and but for the panic on that day they would have been as well cared for.

Yet no one is especially to blame. Letterman's ambulance plan had just been promulgated. McParlin says there was no time to put it in operation. Supply and field hospital plans were still in the future. It is a satisfaction to write that this was the last battle with the Medical Department working without authority and in the old haphazard manner. The next great battle was to see better things, and, from that time on, a steady improvement.

MEDICAL OFFICERS OF THE ARMY AT MANASSAS.

Medical Director	-----	Surgeon Thomas A. McParlin, U. S. Army
Medical Inspector	-----	Surgeon Edward P. Vollum, U. S. Army
Medical Purveyor	-----	Surgeon Josiah Baxter, U. S. Army
Medical Director	McDowell's Corps	Surgeon D. L. Magruder, U. S. Army
	Rickett's Division	Surgeon N. L. Mosely, U. S. V.
	King's Division	Surgeon Peter Pineo, U. S. V.
	Reynolds' Division	Surgeon William King, U. S. Army
Medical Director	Sigel's Corps	Surgeon George Rex, U. S. V.
	Schurz' Division	Surgeon Hamlin, U. S. V.
	Schenck's Division	Surgeon J. B. Peele, U. S. V.
Medical Director	Banks' Corps	Surgeon Thomas Antisell, U. S. V.
	Greene's Division	Surgeon John H. Rauch, U. S. V.
	William's Division	Surgeon Artemus Chapel, U. S. V.
Medical Director	Porter's Corps	Surgeon R. O. Abbott, U. S. Army
	Sykes' Division	Asst. Surg. W. H. Forwood, U. S. Army
	Morrell's Division,	
Medical Director	Heintzelman's Corps	Surgeon John J. Milhau, U. S. Army
	Hooker's Division	Surgeon Thomas Sim, U. S. V.
	Kearney's Division	Surgeon George L. Pancoast, U. S. V.
Divisions of Ninth Corps:		
	Reno's Division	Surgeon Calvin Cutter, U. S. V.
	Stevens' Division.	

EVOLUTION OF THE AMBULANCE CORPS AND FIELD HOSPITAL

The question is not where they were, but which way they were going. Were their faces set forward or backward.

MACAULEY.

FOLLOWING Bull Run there was little immediate improvement in the Medical Department of the Army. The Army of the Potomac was organized; line and staff corps generally were placed on an adequate basis; but the Medical Department remained much the same. The division, or even brigade field hospital, had no existence. No such thing was contemplated by Army Regulations or orders. There was a small regimental personnel, providing regimental aid at the front; there were base hospitals (in old buildings) at the rear, and practically nothing more. Each regiment had a surgeon, an assistant surgeon, a hospital steward, an orderly for each medical officer, and a few men detailed from the line to act as cooks and nurses. The band was expected to assist with the wounded on the battlefield, but no band ever rendered any noteworthy service in this way.

The law of July 22, 1862, provided for a surgeon on the staff of each brigade but gave him neither personnel nor equipment. A medical director for each division had already been appointed under authority of an order by the President. This personnel, with regimental equipment, and such supplies as could be brought up after each battle, were the only provisions for care of the wounded. The regimental units gave first-aid and their ambulances removed the wounded to hospitals established by the division medical directors, or more often by themselves. These hospitals were in buildings, only exceptionally in tents, before Letterman's advent. The removal of the wounded from the field hospitals to the rear devolved on the quartermaster, any available wagons being used.

Usually in Virginia the rail or river advance base was very close to the rear of the army, making evacuation of wounded easy. For the Peninsular Campaign the base was at White House on the Pamunkey, later it was on the James River. In the West, both at Donelson and Shiloh, river steamers came almost to the firing line, and evacuation of the wounded was

simple. Later the Mississippi became a great highway for the sick and wounded from Memphis and Vicksburg. Transportation by boat was recognized as being far preferable to trains for wounded men.

Base hospitals were established early: in Washington, Baltimore, Philadelphia, Cumberland, Frederick, Alexandria and other places in the East; and in Cincinnati, Louisville, Cairo, Mound City, St. Louis and other places in the West. These hospitals need no special description. At first old hotels, academies, and other unused buildings were leased for hospital purposes; later the Sanitary Commission entered a vigorous protest and recommended that temporary hospitals be constructed, which was done.

It will be seen that the chief deficiencies, viewed from our present standpoint, were: Transportation on the field; mobile field hospitals; evacuation hospitals and transportation to same; and organization of the line of communications. The handling of supplies also lacked system and was crude and wasteful, without being efficient. The regimental units cared for the wounded at the front, the general hospitals received them at the base, between them everything was haphazard or entirely lacking. Medical directors of divisions, corps and armies were appointed but they had not the personnel, equipment, or even a system for collecting the wounded, caring for them and evacuating them to the rear.

This could not fail to be observed. It was observed, by medical officers of the regular army, by volunteers, and by members of the Sanitary Commission and state forces, who were in many cases exceedingly patriotic, enthusiastic and energetic in forwarding the war. Moreover some of these men knew that ambulance corps had been used long before in European countries, particularly in France. The Medical Department was conservative, but ambulance corps and field hospitals were bound to appear, and they did appear.

The first use of these units of which I can find record was by Surgeon H. S. Hewitt, U. S. Volunteers, at Fort Donelson, in February, 1862, only seven months after Bull Run, and less than a year from the beginning of the war. Surgeon Hewitt was medical director of General Grant's army of green volunteers. For the battle he collected all the regimental hospitals and organized four field hospitals for the twenty-eight regiments in front of Donelson. Three of these were in local buildings but the fourth was in tents—the first tent field hospital of the war.

The ambulances of all the regiments were also collected by brigades and organized as ambulance trains that could be used systematically wherever needed, without regard to their particular regiments. This Surgeon Hewitt, judged by his full, scholarly, and instructive reports, was an educated man, a close observer, and a logical reasoner, resourceful and energetic. He was doubtless informed as to ambulance trains and field hospitals in other countries. At any rate, he was organizing them when Surgeon Tripler of the regular corps was clinging to regimental hospitals and rejecting ambulance corps. Tripler had served through the Mexican War without so much as regimental ambulances, and appears to have been a thoroughgoing conservative.

This battle of Fort Donelson is deserving of more than passing notice. It was the first important contest in the West and was fought almost entirely by untried volunteers, as was Bull Run in the East; but the medical arrangements were so excellent, considering the time and circumstances, as to challenge admiration. The equipment was no better than at Bull Run, and the personnel little different in numbers or experience. Supplies were notable by their absence. The medical department, however, had two great advantages: first, a competent, energetic chief; second, systematic plans and methods. As stated, four field hospitals were established at regular intervals in rear of the line of battle. The regimental medical officers were directed to establish stations in covered ravines behind the lines; all the ambulances were collected in trains that ran constantly between the dressing stations and field hospitals. Here was the germ of our whole modern system of service at the front.

The weather, from February 13 to 16, was very severe, and the wounded, 1,785 in number, suffered greatly from cold and exposure. There was neither hospital bedding nor clothing; nor was there any food beside the regular field ration. Straw and large tarpaulins were procured from the quartermaster, thus providing beds and shelter. Great fires helped to maintain warmth. Beeves furnished soup; hardtack and coffee completed the diet. Fortunately supply steamers could come almost to the camp and the wounded and sick were sent back to the Ohio River within a week. This was the best and most systematic care of the wounded before the advent of Letterman.

Surgeon Irwin, U. S. Volunteers, of this same army, is generally given the credit for the first use of a tent hospital in the war. At Shiloh, two months later, he seized the tents of one

of Prentice's captured regiments and converted the camp into a hospital which sheltered several hundred wounded during the miserable weather following the battle. By April, 1862, the principal western army had reached the stage of brigade ambulance corps and brigade field hospitals, though these were temporary assemblages rather than permanent organizations. Strange to say, there was little further progress in the western armies until Letterman's system was adopted; in Grant's army, March 30, 1863, and in the Army of the Cumberland soon afterward. These armies were not completely equipped until the spring of 1864.

In the East, after Bull Run, there were no important operations until McClellan began his Peninsular Campaign in April, 1862. For nine months there was no campaigning, and this afforded ample time for organization, equipment and training.

Observers with the army were not satisfied with its medical arrangements, but, on urging changes and progress, were met with stiff adherence to antiquated forms and modes of action outworn even for peace conditions. Again was seen an example of the well-known proposition that the men who begin a war do not finish it. Lord Roberts commented on the ankylosed old men in India at the beginning of the great mutiny, and the promptness with which they gave way to younger, more energetic, and more progressive leaders.

On August 12, 1861, Surgeon Charles Tripler, U. S. Army, he of the manual, became medical director of the Army of the Potomac, then encamped in front of Washington and Alexandria. Some of the shortcomings that he noted were:

Batteries and other small organizations had no medical officers.

There were a number of incompetent surgeons.

There was no effective system of reports.

Regimental surgeons sent patients to general hospitals on their own responsibility.

A very large number of men went to these hospitals, from which they were slow to return.

This state of affairs led him to affirm: "The experience of all armies convinces me of the fact that the sick do much better in regimental than in general hospitals, the latter being nuisances, to be tolerated only because there are occasions when they are absolutely necessary,—as, for instance, when the army is put in motion and cannot transport its sick."

This quotation throws light on Tripler's mental habits and

shows that he looked on the settled camp as the normal and principal place of the army, and the march or battle as incidental and unimportant. An opposite view might have led him to prepare mobile organizations fitted for the field. He issued three hospital tents to each regiment, thus providing for three per cent of its strength. He instituted the hospital fund in the volunteer organizations and was, of course, busy with sanitary measures. Some peculiar minor shortcomings of the Medical Department at that time he does not mention. For example, no clothing was provided for patients, nor was there any arrangement for washing hospital or patients' linen. Field hospitals had no hospital fund. At Antietam, a year later, there were seventy hospitals on the field and not one had a hospital fund.

The hospitals at that time consisted of the regimental tent hospitals and general hospitals in Washington and Alexandria. These latter were improvised in old hotels and similar buildings. Tripler noted the necessity for something more, but the bands of red tape were too strong. He says: "There was no authority for any hospital establishment in the vicinity of the divisions or brigades, that might relieve the hospital tents (regimental) if crowded, or that might keep the men in the camps. It is true I might have organized such establishments, but I was dependent upon the provisions of Army Regulations for the necessary stewards, cooks and nurses." Not much hope for this strict constructionist. It never once occurred to him that in case of pressing military necessity he might do a thing which, while not provided for by regulations, was not directly forbidden by them. To him the regulations were the end and aim of all, not merely a means to a greater end. Man was made for the regulations.

But there were other men who did not interpret Army Regulations as iron bands against all progress. Tripler goes on to say: "Several intelligent and zealous brigade surgeons (volunteers) pressed these hospitals on my attention, and I determined, when I could get the buildings, to put them in operation. I required, however, that the necessary personnel should be furnished by the regiments * * * and that the brigade hospitals should be considered and conducted as aggregations of regimental hospitals." A true conservative, giving way grudgingly under pressure, and as little as possible. "Brigade hospitals were fitted up for Blenker's Brigade, another in Hooker's and afterward several others in Fitz John Porter's Division, and several others." These hospitals seem to have been fixed hospitals, located in temporary

buildings near the camps, not mobile field hospitals, but they were a beginning.

Ambulance transportation also engaged Tripler's attention, and in much the same indefinite manner. He partly acknowledged that an ambulance corps might have some advantages, but regulations and other obstacles effectually prevented any notable advance in that direction. On December 31, 1861, the Army of the Potomac had 314 two-wheel ambulances and but 71 four-wheel ambulances. Tripler estimated for 250 four-wheel ambulances something like one for each four hundred men. At the beginning of the campaign, in April, 1862, the army had 177 of the four-wheel kind; and could secure no more from the Quartermaster Department. More than one-half of these were lost on the Peninsula, only 74 being brought back from Fortress Monroe.

Right here a few words regarding the two-wheel ambulance may be interposed. The armies began the war with two-wheel ambulances. They were soon condemned on every hand. I do not believe that in all the reports of medical and ambulance officers there is a single good word said for this type of ambulance. No one wanted them if he could possibly get any other, and before the war was one-half over, they had disappeared. Later, general orders provided that only four-wheel ambulances should be used. Unless all these men were mistaken the two-wheel ambulance is a worthless contrivance.

Tripler says that several propositions were made by foreigners to raise and command ambulance companies, but they were mere repetitions of continental systems, and however promising, could not, under the existing laws, be used. The Surgeon General of Pennsylvania, on September 19, 1861, offered to organize a corps for the troops of his state, and asked authority of the War department for the same. Surgeon Tripler must be given credit for endorsing this proposition favorably, but the Secretary of War took no notice of it.

An elaborate project for an ambulance corps was submitted to the Secretary by a Mr. Pfersching in March, 1862. This plan embraced a company of one hundred men for each division of the army. This company to have two lieutenants, and a non-commissioned officer for each regiment. The company to follow the army into battle and have for its chief function the carrying of the wounded back to the ambulances. An ingenious device proposed by Pfersching was a litter in two parts, each to be

carried by one man. Some of the details of this plan were faulty, but the general scheme was good for a bearer company. It seems to have included no ambulances. The secretary referred the matter to Surgeon General Finlay, who sent it to Tripler, requesting his views as to its adaptability, and with regard to the question whether the use of the bands would not obviate the necessity for the proposed organization. Surgeon Tripler reported on March 6, 1862:

"Sir:—I have the honor to report * * * However desirable a regularly organized ambulance company may be for an army, it is now too late to raise, drill, and equip so elaborate an establishment. There is nothing new in the plan, nothing not thought of and well weighed years ago. * * * An order providing for the drilling of ten men and the band of each regiment for ambulance service was issued on October 3. * * * When that is done all necessary and practicable arrangements for the transportation of our wounded will have been made. I am, therefore, of the opinion that the plan of Mr. Pfersching is neither needed nor available for our service at the present time."

(Signed) CHARLES E. TRIPLER, Surgeon,
Medical Director, Army of the Potomac.

Time soon wrote another indorsement to this remarkable opinion, and one that made it far from creditable to its author. The Surgeon General returned the report to the Secretary of War fully endorsing the views of Surgeon Tripler. Ambulance corps were not yet to be, and in consequence thousands must suffer unattended for days on the battlefield, even die for want of stimulants and food. It is worth while to state what the preparation that Tripler spoke of in such a smugly confident manner actually was. He says: "The only plan that appeared to be within my reach (regulations always had him bound hand and foot) was that adopted and established by the sixth paragraph of Order No. 20."

This appears to refer to page 6, G. O. No. 30, Headquarters Army of the Potomac, October 3, 1861, which was as follows:

"The hospital attendants, to the number of ten, and the regimental bands will be assembled under the supervision of the brigade surgeon, and will be drilled one hour each day, except Sunday, by the regimental medical officers; in setting up and dismounting the hand litters and ambulances * * * in short, in everything that can render this service effective and the most comfortable for the wounded who are to be transported."

(Signed) S. WILLIAMS, Asst. Adj. General.

Tripler says: "I could, by the plan indicated, expect to command about twenty-five men to a regiment to serve the ambulances when wanted. * * * Whenever this order was obeyed (?) the progress of the men in the drill was quite satisfactory. It was at least the beginning of an ambulance corps. Perhaps a distinct ambulance corps may yet be made a part of our military establishment; I am satisfied it would contribute essentially to the efficiency of the hospital corps." This, his final report, is dated June 30, 1862. It is apparent that a man in such a nebulous state of mind was not to bring forth an ambulance corps.

Meanwhile events were transpiring rapidly. The Sanitary Commission, one of the great moral and physical forces of the war, early learned that the Medical Department must be born again. The Surgeon General, Clement A. Finley, had had forty-three years service and was growing old. An altercation with the Secretary of War brought about his retirement and prepared the way for a new regime. The Sanitary Commission stepped in and dictated the appointment of William A. Hammond as Surgeon General. Hammond had then only the rank of first lieutenant, but had eleven years' previous service, having resigned in 1860 to accept a position as professor in the University of Maryland. No one who ever met William A. Hammond needs to be told of his immense energy and capability. He became Surgeon General April 25, 1862, and there was an immediate change for the better. In June, 1862, the brigade surgeons became surgeons of volunteers, with the rank of major; and were eligible to all the duties and privileges of officers of the regular corps, including promotion.

In July, 1862, Surgeon Tripler was succeeded in the office of Medical Director of the Army of the Potomac by Surgeon Jonathan Letterman. During May and June the army had been fighting in the Peninsula below Richmond. The army had a railway to its nearby base at the White House and during the earlier minor combats the wounded were cared for without difficulty. After the defeat at Gaines' Mills, White House was necessarily abandoned, and everything moved south to the James. The roads led through swamps, there were few ambulances, and the wounded were largely left to their own devices. The principal field hospital was at Savage's Station. There several thousand wounded were collected from Gaines' Mills. The next night the army marched away and 2500 severely wounded were abandoned to the enemy. A few surgeons and scanty supplies

LETTERMAN.



were left, but there must have been great suffering. The Confederates had not resources for their own wounded.

The majority of the wounded from the later engagements reached Harrison's Landing, coming on by wagons or in any way they could, for there was no systematic transportation.

Surgeon J. M. Hand says: "From June 28, we did not see one single wagon or ambulance; they were sent in advance of the column. Three-fourths of the wounded were brought along with the column, the rest were left behind." There were also hundreds of sick, almost as many as of wounded.

The press of work during the Seven Days' Battle must have been tremendous and Tripler accomplished nothing more toward the achievement of either ambulance corps or field hospitals.

Letterman reached the army and was placed on duty July 4, 1862. He found it pretty well exhausted by sickness and the recent campaign. All the hospitals of the entire army were cumbered with sick and wounded. The hot weather, the swampy terrain, the strain of marching and fighting both day and night, with lack of food and the depression of failure, all left the army in a low condition. The sick seem to have been more of a problem to Tripler than the wounded, and well they might. In November, 1861, six per cent of the army was sick and the death rate was thirty per thousand per annum. By June, 1862, the ineffectives amounted to twenty per cent and the death rate had gone up to fifty per thousand. The reasons that Tripler gave for the failure of the Medical Department were:

1. Not enough medical officers.
2. Denial of rank and official position.
3. The idea that surgeons were "merely doctors" to be called on to treat the sick, but not to institute sanitary measures.
4. Not having control of transportation.
5. Professional incompetency of some officers.

These were not the fundamental faults; Letterman and McParlin succeeded in spite of all of them; but the second, third and fourth were undoubtedly serious handicaps.

When Letterman took charge, the Medical Department had to be reorganized, but first the situation must be cleared up. One-fourth of the army was in hospital, supplies and equipment had been exhausted or lost, failure added to the depression of fatigue, and on top of all the army was to be moved elsewhere for another campaign. There were twenty thousand sick and wounded in the hospitals at Harrison's Landing. Two days before reporting for duty, Letterman had asked the Surgeon General for two hundred ambulances and a thousand hospital tents. On August 3, the evacuation of the sick and wounded was begun and as many as five thousand were sent away in one day. By August 15, the army was cleared of sick and wounded.

The task of evacuating twenty thousand sick and wounded in such a short time would appear to be a sufficient task, but in the midst of it Letterman found time to take up the ambulance problem and to carry it to a swift solution. It was not an evolution with him; the thing came forth at once, full-fledged and complete. To be sure, he improved it later, but as first instituted, it was a successful system.

Colonel Clement's monograph says that, "The events of the Peninsular Campaign had given all the medical officers valuable experience and insight." But Letterman took no part in that campaign, he did not see the wounded left behind in the Chickahominy swamps. When the war began he was on duty in California. He accompanied troops to New York and soon joined the Army of the Potomac, then idle in camps. In May, 1862, he was made Medical Director of the Department of West Virginia, where he saw no active duty of importance. On June 19 he received his detail to the Army of the Potomac, but did not reach that army until the campaign was finished and the troops in the last camp. But he did devise the system, and succeeded in putting it into practice in spite of all lack of authority and obstructive regulations. He had the clear vision to see through all the vicissitudes of a moving fighting army, the fundamental organization that was necessary; he also had the courage and energy to secure the fruition of his ideas in practical, working machinery. The conclusion is all but inevitable that his plans had been worked out at leisure previously, not in the few crowded days at Harrison's Landing; that he was ready and only waiting for Opportunity to knock at his door.

The plans were submitted to McClellan, who as a high priest of organization, could not fail to appreciate and approve them. It is noteworthy that this plan was not referred to Washington, where it might easily have been killed or lost, but was put in force by a general order of the Army of the Potomac, dated August 2, 1862. It should also not be forgotten that Letterman had reported for duty only on July 4.

It cannot be claimed that Letterman originated the ambulance corps idea; his claim to distinction is that when ambulance corps were indefinite and untried institutions in our armies, he, in spite of the prejudice of his class, the various confused plans, the seeming impossibility of introducing order and system in the rear of a battle, and the lack of positive authority, personnel and equipment, and while busied with a thousand other

12 MEDICAL DEPARTMENT IN THE CIVIL WAR.

problems, saw the ideal and was able to breathe into it the breath of life. Others proposed ambulance corps; he made one. Surgeon B. A. Vanderkief, U. S. Volunteers, submitted a plan to the Surgeon General on July 15, somewhat as follows:

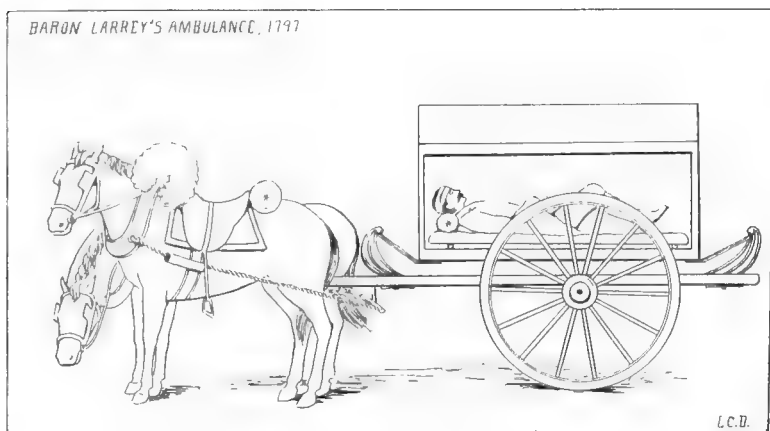
For each division an ambulance corps, under the Medical Director, consisting of 100 men and 4 non-commissioned officers, all under the command of a medical officer with the rank of Surgeon (major), with an assistant with rank of Assistant Surgeon. All enlisted men to be detailed from regiment and receive extra pay. Of transportation there was to be:

12 four-wheel ambulances.

12 two-wheel ambulances.

1 ambulance loaded with medical stores.

4 army wagons for supplies and rations.



One feature of this plan appears superior to Letterman's, that of placing in command a medical officer instead of a detailed quartermaster. It was, however, probably impossible to give a medical officer such actual command at that time. The one ambulance load of medical supplies also appears to me to be an excellent idea.

The essential features of the ambulance corps instituted by McClellan's order were:

An ambulance corps for each army corps, commanded by a captain.

A first lieutenant for each army division, a second lieutenant for each brigade and a sergeant for each regiment.

These officers and men were all detailed from the line, but were under the sole control of the medical directors. The number of ambulances depended on the number and size of the regiments, being three for a regiment of 500 or more, two for smaller regiments, and one for a battery or similar organization. The actual number was about one to 150 men; for example, the Fifth Corps at Gettysburg numbered 12,509 men and had 81 ambulances. All ambulances were taken away from the regiments. The ambulances of each division were kept together in a train; these division trains were sometimes combined in corps trains and sometimes not. Yet the real unit was the corps. Two army wagons were allowed to each division train, say 30 ambulances.

The full ambulance order is appended, namely, the order of August 24, 1863. The original order of August 2, 1862, evidently prepared in haste, was incomplete in some details. The term "two-horse ambulance" means a four-wheel ambulance, of a light type. The four-horse ambulance was something like an army wagon.

Letterman said: "The system I devised was based upon the idea that the ambulances should not be under the immediate control of medical officers, whose duties, especially on the battlefield, would prevent any proper supervision; but that other officers appointed for that purpose, should have charge of the horses, harness, ambulances, etc."

Letterman's order was submitted to the Surgeon General in August, and he appears to have recommended it to McParlin and others. Whether or not it was recommended to the War Department before the second battle of Bull Run I am unable to state; but immediately after that battle with its terrible suffering, exposure, and privation among the wounded, Surgeon General Hammond addressed the following letter to the Secretary of War:

Surgeon General's Office, September 7, 1862.

Hon. Edwin M. Stanton, Secretary of War.

Sir:—I have the honor to ask your attention to the frightful state of disorder existing in the arrangements for removing the wounded from the field of battle. The scarcity of ambulances, the want of organization, the drunkenness and incompetency of drivers, the total absence of ambulance attendants, are now working their legitimate results—results which I feel I have no right to keep from the knowledge of the Department.

An ambulance corps should be organized and set in instant operation. * * * Up to this date 600 wounded still remain

14 MEDICAL DEPARTMENT IN THE CIVIL WAR.

on the battlefield, in consequence of an insufficiency of ambulances, and the want of a proper system for regulating their removal in the Army of Virginia. Many have died of starvation; many more will die in consequence of exhaustion, and all have endured torments which might have been avoided.

I ask, sir, that you will give me your aid in this matter, that you will interpose to prevent a recurrence of such consequences as have followed the recent battles—consequences which will inevitably ensue on the next important engagement if nothing is done to obviate them.

I am, sir, very respectfully,

Your obedient servant,
WILLIAM A. HAMMOND, Surgeon General.

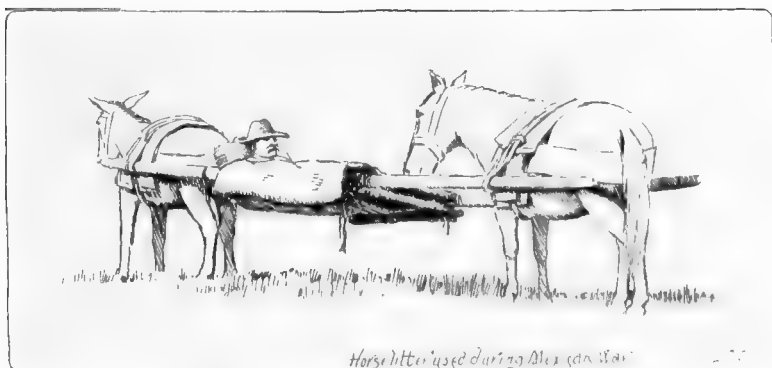
This letter was returned with an indorsement by General Halleck, reiterating his continued disapproval of the whole plan of medical organization. The blame for this mistake is often placed on Secretary Stanton. Halleck had at that time recently been brought to Washington as general-in-chief and adviser to the President. He could hardly be overruled on a technical military point, such as that of the organization of the army.

After all, this disapproval had little real effect, as the ambulance scheme was already operating in the Army of the Potomac. It was placed in operation in the Army of the Tennessee by order of General Grant on March 30, 1863. In the meantime but one battle of importance had been fought, that of Stone River.

The Army of the Potomac left the James River in August, reaching Alexandria during the latter part of that month. A portion of this army took part in Pope's unfortunate campaign, and retired into Washington during the first days of September. McClellan was placed in command of the now united armies and Letterman was again medical director of an army of 100,000 men, with an opportunity, for the first time, to try out his theories. It must be admitted that the trial could not be a fair one. There was no time for preparation. Lee was in Maryland and the army must march at once, whether prepared or not.

To quote Letterman's own words: "The Medical Department of the army was in a deplorable condition. The officers were worn out by the excessive and harassing labors they had undergone with the Army of Virginia (Pope's army). A large portion of the supplies had been left behind at Fortress Monroe, and much of that brought along had been thrown away by commanding officers when on the way to join General Pope. The

labor expended in fitting out the Medical Department at Harrison's Landing seemed to have been expended in vain, and it required to be completely refitted before it would again be in proper condition. The circumstances made this impossible. As soon as the troops reached Washington, they were marched into Maryland (Antietam was fought on September 17) and no time was allowed medical officers to equip themselves for another campaign. In a few instances the medical officers who returned with the first troops procured some supplies. Some troops did



not belong to the Army of the Potomac; I could know nothing of their medical department except what I learned on the way to meet the enemy. The Medical Department of the entire army had to be reorganized and resupplied while upon a rapid march in different sections of the country, and almost in the face of the enemy."

But nothing daunted Letterman. He required supplies, to be prepared at Baltimore and sent on telegraphic notice. Ambulances joined the army at various places along the line of march. For example, two hundred were received at Frederick, only two days before the battle at South Mountain, showing an accuracy of judgment that almost amounted to prophecy.

Four days later, the great battle of Antietam, or Sharpsburg, took place. Although the line of battle was six miles long, the ten thousand wounded were collected promptly. On the right wing, where the fighting was most severe, the wounded were all cared for by two o'clock next day. On the left, where the ambulance organization was not so good, the work was completed by evening.

It may be said that in this battle all the wounded were collected and placed under shelter within twenty-four hours. Hospital facilities, however, were poor and the returns of dead and wounded were in great confusion. Supplies also were very unsatisfactory.

This was Letterman's first battle. On the whole, the ambulance corps came through the bloodiest day in American history with flying colors. The story as to field hospitals and supplies is different. Division hospitals were not yet in existence, nor was there any effective supply system. For the first few days the Sanitary Commission was largely depended on for supplies.

The wounded were collected in houses, barns, sheds and under anything that afforded the slightest shelter. These conditions were of course unsatisfactory and would have been more so had the weather been unfavorable or the enemy victorious. To collect the wounded systematically was but one step.

While yet busy with twelve thousand wounded on the field and at Frederick, Letterman attacked the problem of medical supplies, and then that of field hospitals. The regiments had wasted great quantities of supplies and were nearly always short in time of battle. The Sanitary Commission had gone on record against the regimental system; everyone saw the evils of that system but no one had been able to remedy it. Letterman instituted supply tables with definite allowances for stated periods and issued these supplies to the brigade surgeons, who were to give out small quantities to the regiments as needed. Brigade wagons carried the supplies. This was a marked improvement, and a step toward division supplies. The full order is appended.

Letterman next gave his attention to the subject of field hospitals. He says:

These instructions having been issued my attention was given to the matter of treating the wounded on the field. As far as I knew, no system of field hospitals existed in any of our armies, and, convinced of the necessity for devising some measure by which the wounded would receive the best surgical aid which the army afforded, with the least delay, my thoughts naturally turned to this most important subject. On the battlefield, where confusion in the medical department is most disastrous, it is most apt to occur; and unless some arrangements be adopted by which every medical officer has his station pointed out, his duties defined beforehand, and his accountability strictly enforced, the wounded must suffer. To remedy this want which

existed, I instituted the system of field hospitals, as exhibited in the following circular.

Such is the entire statement of Letterman, showing one of the attributes of true greatness not always associated with it by the unthinking—simplicity.

The problem was solved while the army lay about Sharpsburg, and the circular establishing these hospitals was issued October 30, 1862. Letterman found the necessary authority, assumed the responsibility, and by a single circular letter to his subordinate medical officers inaugurated this great reform.

The main feature in this plan was that it directed the establishment of a field hospital for each division and provided personnel and equipment for the same. It, of course, abolished the regimental hospital, but that institution died a lingering death, not becoming entirely extinct until the spring of 1864.

The ambulance system, the scheme of supplies, and the field hospital system completed the organization of the medical service at the front. The actual organization and equipment of the Army of the Potomac in accordance with these orders was not completed until April, 1864, when that army was preparing for its last Richmond campaign. The armies of the West were not similarly complete in medical organization until a little later, when Sherman was nearing Atlanta, in June, 1864.

Two divisions of the work for the medical department in war were now complete: regimental aid, and divisional care of the wounded, with the necessary transportation. The service of the rear, evacuation hospitals, transport columns and the line of communications generally—none of these was organized systematically, but was left in each case to be provided for as circumstances allowed. This was, of course, generally unsatisfactory.

Letterman's complete system for the front received its first trial at Fredericksburg, December 13, 1862, and it worked admirably. The conditions were generally favorable; there was time to equip all the divisions; the field of battle was simple and circumscribed; a railway led back to the Potomac, only a few miles distant; the army, though unsuccessful, withdrew from the field leisurely and in order. The division hospitals were established on the northern bank of the river, but one or two hospitals of each corps engaged was taken across and maintained there for a few days. Five hundred hospital tents were held in readiness at Washington. The ambulances crossed with

CACOLET 1854-1861.



L. C. Duncan

the troops and the great battle was entered with confidence by the medical officers.

The wounded were mostly under fire and could not be removed until dark; but as soon as night came, early in December, the ambulances moved forward, and, in spite of occasional shots,

all the wounded outside the enemy's pickets were brought in before morning, or within twelve hours. This was a performance never before equalled in a great battle. The wounded, more than ten thousand in number, were sheltered in tents, moved to the north side of the river by the fifteenth, and by December 25 all had been evacuated to Washington. Letterman desired to retain the severely wounded on the field as at Antietam but General Burnside ordered them all removed without delay, presumably for military reasons.

Fredericksburg was the first great battle in which the work of the medical service at the front had been reasonably satisfactory. Doctor D. W. Brink, an inspector of the Sanitary Commission, said in his report:

Before closing this report I would again refer to the Medical Department of the Army. The most marked improvement is observable in all that pertains to the management of the wounded. Instead of churches, dwellings, barns and sheds, being crowded, and many remaining unsheltered, as was the case at Antietam and elsewhere after great battles, ample accommodations were provided in tents, with blankets and all essential stores. The ambulance corps is so improved that it will, I believe, compare favorably even with that of France. But above all, the organization of the Medical Corps for field and hospital service is deserving of the highest encomiums.

For these important improvements in supplies, ambulance trains and field hospitals, Letterman is almost entirely responsible. The Surgeon General no doubt supported them, and the Secretary of War placed no obstacles in the way of men who knew clearly what they wanted, and who wanted practical things.

Fredericksburg marks the completion of the change in medical management that was begun at Antietam. After this battle, and the "Mud March," the army settled down in winter quarters at Falmouth. Each division maintained its hospital, but the division hospitals of each army corps were grouped together and located back toward Aquia Creek.

At Chancellorsville the system worked admirably, and at Gettysburg as well as possible under the circumstances. The ambulance corps brought off the wounded promptly, but the field hospitals, being held twenty miles in the rear, were unavailable, and the surgeons were forced to improvise hospitals of all kinds, therefore the experiences of Antietam were repeated. After Gettysburg there were no battles of importance in the East for ten months. When Letterman left the Army, in January,

1864, the ambulance system was complete as it remained to the end of the war. While there was no reserve ambulance company as in our present scheme, there were about twice as many men and ambulances per thousand as now. The officers and men were detailed from the line but were a part of the Quartermaster Department. It would seem that such an arrangement would have led to endless difficulties between the two departments, but none is recorded, nor did anyone recommend a change. The two staff departments appear to have worked together in perfect harmony.

Letterman's field hospital system was inferior to his ambulance



system. When he left the service it was a loosely bound aggregation, temporarily formed after each engagement. It had the following defects:

Temporary character, only mobilized for an engagement.

Its officers were primarily officers of other organizations.

A large part of the supplies and even tentage belonged to the brigades.

The enlisted personnel was too small.

The records were very poorly kept.

Another fault was that both ambulance corps and field hospitals were drawn on for the service of the rear.

Later under McParlin some of these faults were remedied. The status toward the end of the war is given in the chapter on the Battle of the Wilderness.

Letterman retired from the Army in January, 1864, and Mc-

Parlin succeeded him. The ambulance corps and field hospital service under McParlin's direction reached a high degree of excellence. By the summer of 1864 the Medical, as well as the Quartermaster, Subsistence and other staff departments of the great armies of the Republic, had reached a point of perfection that merit all commendation, and will repay careful study. It is doubtful if any modern railway system works more smoothly and successfully. When we consider the ever changing scenes and conditions, the effects of weather, the hard marches, the losses of men and the exhaustion of tremendous battles; the wonder is that any organization of human contrivance could stand the strain; could supply such armies and could care for the wrecks left in their wake.

But it was done, henceforth there were no more Bull Runs. Wherever a column operated against the enemy, wherever sabers flashed or musketry rattled, there were ambulances ready to take up the wounded and swiftly convey them to the waiting hospitals in the rear. That these men did not wait for the bullets to cease flying is evidenced by the names of forty medical officers who died on the field of battle. Through the pines of Georgia and the swamps of the Carolinas; in the deadly thickets of the Wilderness and on the fireswept flats of Cold Harbor; in the last race with Meade and Sheridan; through rain and mud; over bottomless roads and across unbridged streams, the ambulance trains pressed on and the field hospitals were not far behind. No more wounded were abandoned on the field.

By day and night, in mud and dust, in sun and storm, worked the officers and men of the medical department; without hope of reward or even official recognition. Noncombatants, they had not the urging of martial music nor the sweeping spirit of the charge to carry them on to duty. But laboring alone in the rear, often by night, and after days of exhausting toil, unseen and unchronicled, faithfully they performed their task; one requiring as rare a brand of courage as that which sends men to the cannon's mouth.

Of all the men who labored for the sick and wounded during the great war, the name of Jonathan Letterman stands out pre-eminent. His work was all but forgotten, even among the members of the corps in which he belonged. As Colonel Hoff has said: "With the close of the war, so rich in dearly bought experience, the Medical Department, apparently content to embalm that experience, between the covers of its great history, returned

to the methods of ante-bellum days." Fortunately that experience is again being recalled.

Letterman died with his great work unrewarded and largely unrecognized. Doctor Agnew closed his report on the Battle of Antietam with these words:

"I cannot close this hasty letter without expressing my sense of obligation to Doctor Letterman for unusual facilities and to all the surgeons with whom I came in contact, for their uniform courtesy and confidence. The country should be proud of these faithful men, who labor day and night to alleviate the suffering of the battlefield, without hope of 'honorable mention' or a 'brevet' in this world; may they have their reward in the next, where the fact of having given a cup of cold water to a suffering human being will be made the occasion of a never-fading record and an exhaustless blessing."

APPENDIX A. AMBULANCE CORPS ORDER.

Headquarters, Army of the Potomac,
August 24, 1863.

General Orders, }
No. 85. }

The following revised regulations for the organization of the Ambulance Corps, and the management of the Ambulance Trains, are published for the government of all concerned, and will be strictly observed:

1. The Army Corps is the unit of organization for the ambulance corps, and the latter will be organized upon the basis of the Captain as the commandant of the corps, one 1st Lieutenant for each division, one 2d Lieutenant for each brigade, one Sergeant for each regiment.

2. The Privates of this corps will consist of two men and one driver to each ambulance, and one driver to each medicine wagon.

3. The two-horse ambulances only will be used, and the allowance, until further orders, to each corps, will be upon the basis of three to each regiment of infantry, two to each regiment of cavalry, one to each battery of artillery, to which it will be permanently attached, and two to the headquarters of each army corps, and two army wagons to each division. Each ambulance will be provided with two stretchers.

4. The captain is the commander of all the ambulances, medicine and other wagons in the corps, under the immediate direction of the Medical Director of the Army Corps to which the ambulance corps belongs. He will pay special attention to the condition of the ambulances, wagons, horses, harness, etc., and see that they are at all times in readiness for service; that the officers and men are properly instructed in their duties, and that these duties are performed, and

that the regulations for the corps are strictly adhered to by those under his command. He will institute a drill in his corps, instructing his men in the most easy and expeditious method of putting men in and taking them out of the ambulances, lifting them from the ground and placing and carrying them on stretchers, in the latter case observing that the front man steps off with the left foot and the rear man with the right, etc.; that in all cases his men treat the sick and wounded with gentleness and care; that the ambulances and wagons are at all times provided with attendants, drivers, horses, etc.; that the vessels for carrying water are constantly kept clean and filled with fresh water; that the ambulances are not used for any other purpose than that for which they are designed and ordered. Previous to a march he will receive from the Medical Director of the Army Corps his orders for the distribution of the ambulances for gathering up the sick and wounded previous to, and in time of, action; he will receive orders from the same officer where to send his ambulances, and to what point the wounded are to be carried. He will give his personal attention to the removal of the sick and wounded from the field in time of action, going from place to place to ascertain what may be wanted; to see that his subordinates (for whose conduct he will be responsible) attend faithfully to their duties in taking care of the wounded, and removing them as quickly as may be found consistent with their safety to the field hospital, and see that the ambulances reach their destination. After every battle he will make a report, in detail, of the operations of his corps to the Medical Director of the Army Corps to which he belongs, who will transmit a copy, with such remarks as he may deem proper, to the Medical Director of this Army. He will give his personal attention to the removal of sick when they are required to be sent to general hospitals, or to such other points as may be ordered. He will make a personal inspection, at least once a month, of everything pertaining to the ambulance corps, a report of which will be made to the Medical Director of the Corps, who will transmit a copy of the report to the Medical Director of this Army. This inspection will be minute and made with care, and will not supersede the constant supervision which he must at all times exercise over his corps. He will also make a weekly report, according to the prescribed form, to the same officer, who will forward a copy to the Medical Director of this Army.

5. The 1st Lieutenant assigned to the ambulance corps for a division, will have complete control, under the captain of his corps and the Medical Director of the Army Corps, of all ambulances, medicine and other wagons, horses, etc., and men in that portion of the ambulance corps. He will be the Acting Assistant Quartermaster for that portion of the corps, and will receipt and be responsible for all the property belonging to it, and be held responsible for any deficiency in anything appertaining thereto. He will have a traveling cavalry force, a blacksmith, and a saddler, who will be under his orders to enable him to keep his train in order. His supplies will be drawn from the depot Quartermaster, upon requisitions approved by the captain of his corps, and the Commander of the Army Corps

to which he is attached. He will exercise a constant supervision over his train in every particular, and keep it at all times ready for service. Especially before a battle will he be careful that everything be in order. The responsible duties devolving upon him in time of action, render it necessary that he be active and vigilant and spare no labor in their execution. He will make reports to the captain of the corps, upon the forms prescribed, every Saturday morning.

6. The 2d Lieutenant will have command of the portion of the ambulance corps for a brigade, and will be under the immediate orders of the commander of the ambulances for a division, and the injunctions in regard to care and attention and supervision prescribed for the commander of the division he will exercise in that portion under his command.

7. The Sergeant will conduct the drills, inspections, etc., under the orders and supervision of the commander of the ambulances for a brigade, be particular in enforcing all orders he may receive from his superior officer, and that the men are attentive to their duties.

The officers and non-commissioned officers will be mounted. The non-commissioned officers will be armed with revolvers.

8. Two Medical Officers, and two Hospital Stewards will be detailed, daily, by roster, by the Surgeon-in-Chief of Division, to accompany the ambulances for the Division, when on the march, whose duties will be to attend to the sick and wounded with the ambulances, and see that they are properly cared for. No man will be permitted, by any line officer, to fall to the rear to ride in the ambulances, unless he has written permission, from the senior Medical Officer of his regiment, to do so. These passes will be carefully preserved, and at the close of the march be transmitted, by the senior Medical Officer with the train, with such remarks as he may deem proper, to the Surgeon-in-Chief of his Division. A man who is sick or wounded, who requires to be carried in an ambulance, will not be rejected, should he not have the permission required; the surgeon of the regiment who has neglected to give it, will be reported at the close of the march, by the senior surgeon with the train, to the Surgeon-in-Chief of his Division. When on the march, one-half of the privates of the ambulance corps, will accompany, on foot, the ambulances to which they belong, to render such assistance as may be required. The remainder will march in the rear of their respective commands, to conduct, under the order of the Medical Officer, such men as may be unable to proceed to the ambulances, or who may be incapable of taking proper care of themselves until the ambulances come up. When the case is of so serious a nature as to require it, the surgeon of the regiment, or his assistant, will remain and deliver the man to one of the Medical Officers with the ambulance. At all other times the privates will be with their respective trains. The medicine wagons will, on the march, be in their proper places, in the rear of the ambulances for each brigade. Upon ordinary marches, the ambulances and wagons belonging to the train will follow immediately in the rear of the division to which it is attached. Officers connected with the corps must be with the train when on the march, observing that no one rides in any of the ambulances except by the authority of the

Medical Officers. Every necessary facility for taking care of the sick and wounded upon the march will be afforded the Medical Officers by the officers of the ambulance corps.

9. When in camp, the ambulances will be parked by divisions. The regular roll-calls, reveille, retreat, and tattoo, will be held, at which at least one commissioned officer will be present and receive the reports. Stable duty will be at hours fixed by the captain of the corps, and at this time, while the drivers are in attendance upon their animals, the privates will be employed in keeping the ambulances to which they belong in order, keeping the vessels for carrying water filled with fresh water, and in general police duties. Should it become necessary for a regimental Medical Officer to use one or more ambulances for transporting sick and wounded, he will make a requisition upon the commander of the ambulances for a division who will comply with the requisition. In all cases when the ambulances are used, the officers, non-commissioned officers, and men belonging to them, will accompany them; should one ambulance only be required, a non-commissioned officer as well as the men belonging to it will accompany it. The officers of the ambulance corps will see that ambulances are not used for any other purposes than that for which they are designed, viz.: the transportation of sick and wounded, and in urgent cases only, for medical supplies. All officers are expressly forbidden to use them, or require them to be used, for any other purpose. When ambulances are required for the transportation of sick or wounded at Division or Brigade Headquarters, they will be obtained, as they are needed for this purpose, from the Division train, but no ambulances belonging to this corps will be retained at such Headquarters.

10. Good, serviceable horses will be used for the ambulances and medicine wagons, and will not be taken for any other purpose except by orders from these Headquarters.

11. This corps will be designated by Sergeants, by a green band one and one-quarter inches broad around the cap, and chevrons of the same material, with the point toward the shoulder, on each arm above the elbow. For Privates, by a band the same as for Sergeants around the cap, and a half chevron of the same material on each arm above the elbow.

12. No person except the proper Medical Officers, or the officers, non-commissioned officers, and privates of this corps, will be permitted to take or accompany sick or wounded to the rear, either on the march or upon the field of battle.

13. No officer or man will be selected for this service except those who are active and efficient, and they will be detailed and relieved by Corps Commanders only.

14. Corps Commanders will see that the foregoing regulations are carried into effect.

By Command of Major General Meade:

S. WILLIAMS,
Assistant Adjutant General.

APPENDIX B.

II.

SUPPLY TABLE FOR THE MEDICAL DEPARTMENT OF THE
ARMY OF THE POTOMAC.

HEADQUARTERS ARMY OF THE POTOMAC,

Medical Director's Office,

[Circular.]

September 3, 1863.

The following table of supplies for the Medical Department of this Army is published, instead of the one contained in the Circular from this office of October 4, 1862.

Experience has more fully shown the expediency of the manner of supplying this Department, as ordered by the Circular referred to, and it will be kept up.

There will be allowed, in the Army of the Potomac, the following supplies to a Brigade for one month, for active field service, viz.:

One Medicine Wagon, filled.

One Medicine Chest for each Regiment, filled.

One Hospital Knapsack for each Regimental Medical Officer, filled.

Supplies in the list marked "A," which will be carried in an ordinary Army wagon.

The Surgeon-in-Chief of each Brigade will require and receipt to the Medical Purveyor for all these supplies, and will issue to the senior Medical Officer of each Regiment in his Brigade the Medicine Chest and Knapsacks, taking his receipt therefor. The Wagons, both Medicine and Army, will be receipted for by the Ambulance Quartermaster.

The Surgeons-in-Chief of Brigades will issue to Regimental Medical Officers such of the supplies from the Medicine or Army Wagon as may from time to time be required. These issues will be informal, the Surgeons-in-Chief giving no invoices, demanding no receipts, but accounting for them as expended. At the same time they will be particular that no improper expenditure or wastage is permitted. These officers are especially directed, when they shall have drawn the monthly supply, not to divide it out among the Regiments, but only to issue the articles at such times and in such quantities as they are needed for use, or to keep the Medicine Chests and Knapsacks supplied.

Requisitions will be made in duplicate, and in strict conformity with this table; and in all cases the articles will be enumerated in the order in which they occur in it. Supplies will only be issued by the Medical Purveyor upon requisitions approved by Medical Directors of Corps, and these officers are particularly enjoined to revise all requisitions with care, that sufficient supplies may be on hand, and yet that no unnecessary expenditure be permitted. As far as possible, requisitions will be made but once a month, and special requisitions avoided as far as practicable.

The supply allowed will be kept up, and Medical Directors will see, especially before a march or battle, that timely requisitions are made, and the supplies obtained.

In all ordinary cases, the amount on hand at the time the requisition is made, will be given, as well as the amount required, and requisitions will be made only for such articles, and in such amounts, as may be necessary to fill up the Brigade Supply to the amount ordered to be kept on hand.

Should the welfare of the sick demand a greater amount than is given by this table, or for articles which are not allowed by it, the reasons therefor must be fully and clearly stated, and the requisitions approved at this office. The Medical Purveyor will keep on hand only such articles as are contained in this table.

Instruments, except such as are enumerated in this table, will be issued only upon requisitions approved at this office.

When articles, such as Instruments, Medicine Chests, are from any cause unserviceable, they will not be turned into the Medical Purveyor, unless inspected and ordered to be disposed of in accordance with the instructions contained in General Order No. 37, Headquarters of Army of the Potomac, April 2, 1863. Whenever it becomes necessary for any other cause to turn in supplies to the Medical Purveyor, application, with reasons therefore will be made to this office. The knapsacks will be carried in each regiment, when on the march, by a hospital steward.

The above is the revised order, the original order was issued October 4, 1862. The medical purveyor referred to was in charge of the reserve supplies of the whole army.

APPENDIX C.

FIELD HOSPITAL ORDER.

HEADQUARTERS ARMY OF THE POTOMAC,

Medical Director's Office,

October 30, 1862.

[Circular.]

Sir: In order that the wounded may receive the most prompt and efficient attention during and after an engagement and, that the necessary operations may be performed by the most skillful and responsible Surgeons at the earliest moment, the following instructions are issued for the guidance of the Medical Staff of this Army, and Medical Directors of Corps will see that they are promptly carried into effect:

Previous to an engagement, there will be established in each Corps a hospital for each Division, the position of which will be selected by the Medical Director of the Corps.

The organization of the hospital will be as follows:

1st. A Surgeon, in charge; one Assistant Surgeon, to provide food and shelter, etc.; one Assistant Surgeon, to keep records.

2d. Three Medical Officers, to perform operations; three Medical Officers, as assistants to each of these officers.

3d. Additional Medical Officers, Hospital Stewards, and Nurses of the Division.

The Surgeon in charge will have general superintendence, and be responsible to the Surgeon-in-Chief of the Division for the proper

administration of the hospital. The Surgeon-in-Chief of Division will detail one Assistant Surgeon who will report to, and be under the immediate orders of the Surgeon in charge, whose duties shall be to pitch the hospital tents and provide straw, fuel, water, blankets, etc.; and when houses are used, put them in proper order for the reception of wounded. This Assistant Surgeon will, when the foregoing shall have been accomplished, at once organize a kitchen, using for this purpose the hospital mess chests and the kettles, tins, etc., in the ambulances. The supplies of beef stock and bread in the ambulances, and of arrow-root, tea, etc., in the hospital wagon, will enable him to prepare quickly a sufficient quantity of palatable and nourishing food. All the cooks, and such of the Hospital Stewards and Nurses as may be necessary, will be placed under his orders for these purposes.

He will detail another Assistant Surgeon, whose duty it shall be to keep a complete record of every case brought to the hospital, giving the name, rank, company, and regiment; the seat and character of injury; the treatment; the operation, if any be performed; and the result; which will be transmitted to the Medical Director of the Corps, and by him sent to this office.

This officer will also see to the proper interment of those who die, and that the grave is marked with a head-board, with the name, rank, company, and regiment legibly inscribed upon it.

He will make out two "Tabular statements of wounded," which the Surgeon-in-Chief of Division will transmit within thirty-six hours after a battle, one to this office (by a special messenger, if necessary) and the other to the Medical Director of the Corps to which the hospital belongs.

There will be selected from the Division, by the Surgeon-in-Chief, under the direction of the Medical Director of the Corps, three Medical Officers, who will be the operating staff of the hospital, upon whom will rest the immediate responsibility of the performance of all important operations. In all doubtful cases, they will consult together, and a majority of them shall decide upon the expediency and character of the operation. These officers will be selected from the Division without regard to rank, but solely on account of their known prudence, judgment, and skill. The Surgeon-in-Chief of the Division is enjoined to be especially careful in the selection of these officers, choosing only those who have distinguished themselves for surgical skill, sound judgment, and conscientious regard for the highest interests of the wounded.

There will be detailed three Medical Officers to act as assistants to each one of these officers, who will report to him and act entirely under his direction. It is suggested that one of these assistants be selected to administer the anaesthetic. Each operating surgeon will be provided with an excellent table from the hospital wagon, and, with the present organization for field hospitals, it is hoped that the confusion and the delay in performing the necessary operations so often existing after a battle will be avoided, and all operations hereafter be primary.

The remaining Medical Officers of the Division, except one to each Regiment, will be ordered to the hospital to act as dressers and assistants generally. Those who follow the Regiments to the field

will establish themselves, each one at a temporary depot, at such a distance or situation in the rear of his Regiment as will insure safety to the wounded, where they will give such aid as is immediately required; and they are here reminded that, whilst no personal consideration should interfere with their duty to the wounded, the grave responsibilities resting upon them render any unnecessary exposure improper.

The Surgeon-in-Chief of the Division will exercise general supervision, under the Medical Director of the Corps, over the medical affairs in his division. He will see that the officers are faithful in the performance of their duties in the hospital and upon the field, and that, by the ambulance corps, which has heretofore been so efficient, the wounded are removed from the field carefully and with despatch.

Whenever his duties permit, he will give his professional services at the hospital—will order to the hospital as soon as located all the hospital wagons of the brigades, the hospital tents and furniture, and all the hospital stewards and nurses. He will notify the Captain commanding the ambulance corps, or, if this be impracticable, the First Lieutenant commanding the Division ambulances, of the location of the hospital.

No Medical Officer will leave the position to which he shall have been assigned without permission, and any officer so doing will be reported to the Medical Director of the Corps, who will report the facts to this office.

The Medical Directors of Corps will apply to their Commanders on the eve of a battle for the necessary guard and men for fatigue duty. This guard will be particularly careful that no stragglers be allowed about the hospital, using the food and comforts prepared for the wounded.

No wounded will be sent away from any of these hospitals without authority from this office.

Previous to an engagement, a detail will be made by Medical Directors of Corps of a proper number of Medical Officers, who will, should a retreat be found necessary, remain and take care of the wounded. This detail Medical Directors will request the Corps Commanders to announce in orders.

The skilful attention shown by the Medical Officers of this Army to the wounded upon the battlefields of South Mountain, Crampton's Gap, and the Antietam, under trying circumstances, gives the assurance that, with this organization, the Medical Staff of the Army of the Potomac can with confidence be relied upon under all emergencies, to take charge of the wounded entrusted to its care.

Very respectfully, your obedient servant,

JONA. LETTERMAN,
Medical Director.

THE BLOODIEST DAY IN AMERICAN HISTORY— ANTIETAM

Quelle confiance d'ailleurs, quelle énergie ne donne pas, sur le champ de bataille, à un soldat, la certitude qu'en cas de blessures les soins les plus efficaces lui seront prodigués!

—MARSHAL MARMONT.

THE day on which the battle of Antietam was fought has been called the bloodiest day in American history. The troops fought at close range and with determined obstinacy; mostly in the open where lines stood out against the sky; the rolling hills gave good play for artillery; man's instruments of destruction could be used to their utmost capacity. More men were killed or wounded than in any other one day in the history of the republic.

General Situation and Terrain.

The general situation of the Federal Government was never worse than during the first weeks of September, 1862. The army had been defeated, confounded, humiliated; it was withdrawn within the defenses of Washington for safety, while the flag of the Confederacy again flew almost within sight of the capitol. In the West, Grant was under a cloud, Nelson had been routed by Kirby Smith, and Buell was falling back to Louisville. Except along the Mississippi, everything south of the Ohio and Potomac seemed lost, and the armies back where they were at the beginning. All the resources of the nation in manhood and wealth appeared to stand for nought, and the republic, like Rome after Lake Trasimene, tottered to its foundations. It was then that Walt Whitman voiced the imploring prayer of the nation, "Abraham Lincoln, give us a man." But the fates vouchsafed no reply; the man was battling obscurely in the West and many disasters were yet in store for the much-tried army before it should march to final victory.

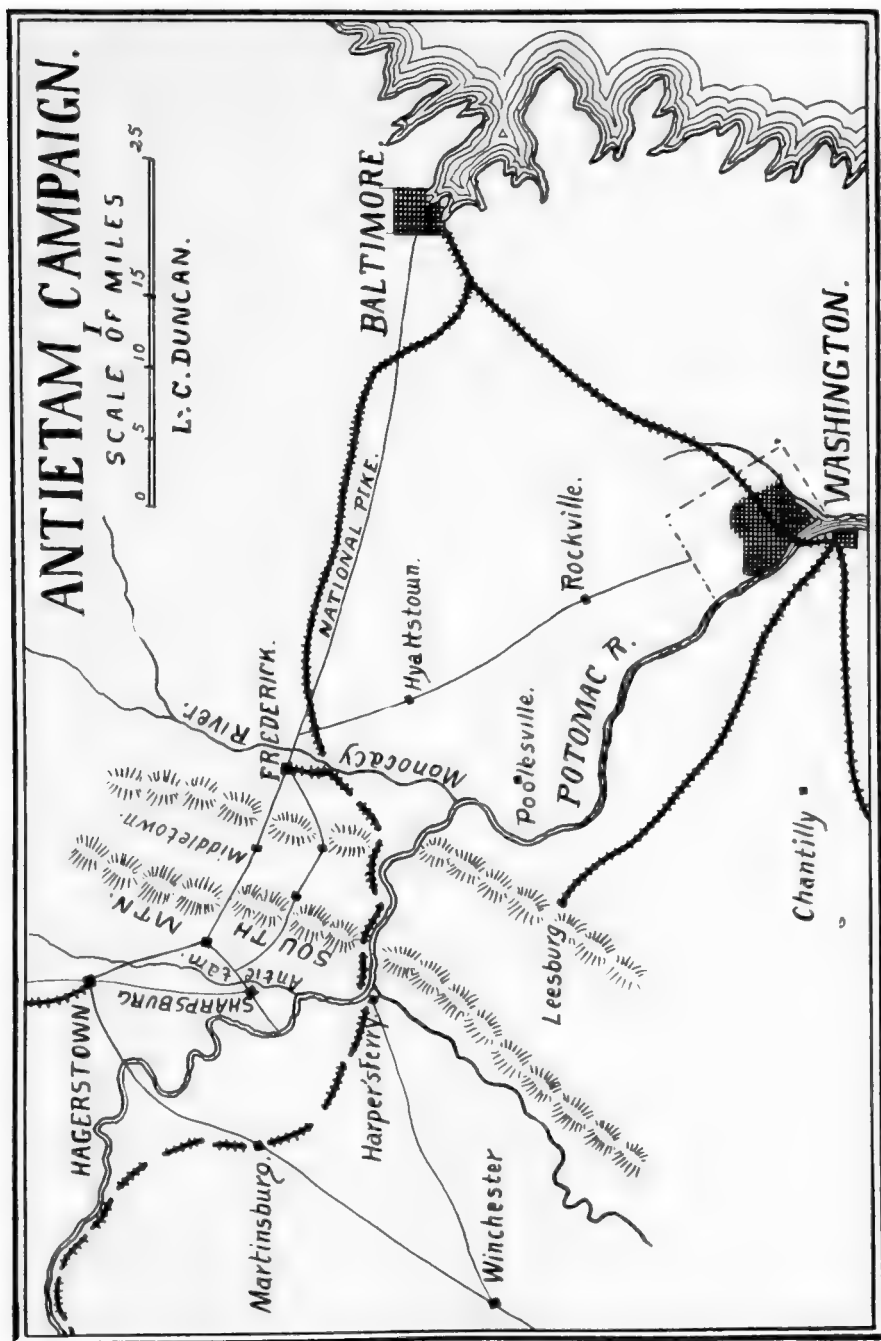
After the Peninsula and Manassas, the southern leaders might well think their army invincible and their cause on the eve of complete success. Yet the Army of the Potomac never

lost its morale. Despite the blunders and cruel losses of Pope's campaign, that army was still ready to fight. The men of the Pennsylvania Reserves, of the Regular Division of the Iron Brigade, of New England and New York, might have said, like the Irish after the battle of the Boyne, "Change leaders with us and we'll fight you again." And they would have won, too, for they had been fed, clothed, supplied and reinforced; while the Confederates would have been obliged to fight with their sadly thinned ranks still more depleted by weary marching. It is the crowning glory of the Army of the Potomac that in spite of blunder and disaster, and of mismanagement both at Washington and in the field, it never lost the faith. With most great armies it has been the leader that won, in spite of poor soldiers; the converse is largely true of this army.

The territory covered by the campaign is a triangle between Frederick and two points on the Potomac: Washington and Williamsport. The country is open, gently rolling, but rises to some low mountain ridges between Frederick and the Potomac. The actual scene of conflict was confined to a small area between the Monocacy on the east, the Potomac on the south and west, and the Pennsylvania line on the north. This territory was well settled, with good roads, prosperous villages and conditions generally favorable for campaigning by a large army. The people were as a rule friendly, giving food to the soldiers and information to officers. The weather was fine, but warm and dry at the beginning, making the roads dusty and causing much straggling.

Almost everyone who has written of this campaign has told how delightful to the eye was the beauty of this charming landscape. The great hills and smiling valleys were dotted over with comfortable farmhouses, rich orchards and capacious barns; while between, white roads wound away to the distant hills of South Mountain. Many beside the poet were moved to admiration by the clustered spires of Frederick, green-walled by the hills of Maryland. To the soldiers wearied by the sickly swamps of the Chickahominy and the dreary gray woods and hills of Bull Run it must have seemed a land flowing with milk and honey.

Frederick was the only place of importance in the whole region, but there were many thriving villages which extended an open-armed welcome to the army. The place had been occupied and had a permanent hospital of several hundred beds.



There were paved streets, water and gas supply, and the location was one of the most healthful within reach of Washington.

Washington was and remained the base of the army throughout all its campaign. The line of communication was by the Baltimore and Ohio Railway to Baltimore, and thence to Frederick; or rather to the Monocacy River, four miles east; for the Confederates had destroyed the bridge at that point, and the railway west beyond the Potomac. Transportation was by wagon train until the army reached Frederick, and in part until it passed South Mountain, September 14. At Frederick the railway was picked up and that point became the advance base of the army. The old National Pike, from Baltimore to the West, passes through Frederick, and on over the mountain ranges by Middletown and Boonesboro to Hagerstown. Other parallel roads run on either side, through the gaps in the mountains, which are here about a thousand feet high, with easy ascent to the passes. The distance from Washington to Frederick is about 45 miles; from Frederick to the Antietam, about 18 miles.

There was a secondary line of communication by way of Baltimore, Harrisburg and Chambersburg, to Hagerstown, about 15 miles from Sharpsburg. After the battle this line was used to a small extent for bringing up supplies and for evacuating the wounded; but the line by Frederick was most direct and remained the principal one. The Chesapeake and Ohio Canal was also used for transportation of supplies as far as Edward's Ferry. Earlier it had been used for carrying the wounded, but I find no account of such use at this time.

The Army.

The army of the Antietam campaign was made up as follows:

First Corps, Hooker (formerly McDowell).....	3 divisions, 14,856 men
Second Corps, Sumner	3 divisions, 18,813 men
Fifth Corps, Porter	2 divisions, 12,930 men
Sixth Corps, Franklin	2 divisions, 12,300 men
Ninth Corps, Burnside	4 divisions, 13,879 men
Twelfth Corps, Mansfield (formerly Banks)....	2 divisions, 10,126 men
Cavalry Division, 5 brigades, 12 regiments.....	4,320 men

Total..... 87,164 men

The divisions as a rule consisted of three brigades, each of four regiments, with a battery attached; but Burnside had but two brigades in each of his four small divisions. There were

also about twelve thousand civilians with the army, in various capacities.

The Third Corps (Heintzelman) and the Eleventh (Sigel) were left in the defense of Washington. A division (Fourth Corps) under Couch and Humphreys' division of the Fifth Corps did not reach Antietam until the day after the battle. With these two divisions McClellan had 100,000 men, not counting 12,000 at Harper's Ferry and 73,000 in the defences of Washington.

While McClellan had about 87,000 men for duty at Antietam, it is doubtful if more than 50,000 men were actually engaged. Porter's corps was not engaged to any extent, and only one brigade of Franklin's was engaged. The cavalry also may be omitted. Of the First Corps not more than 10,000 were engaged; Ricketts says 3,158 in his division, Meade less than 3,000 in his. Allowing Doubleday 4,000, we have 10,000 in this corps. The Twelfth Corps was notoriously weak; Greene's division took but 2,504 men into the fight; Williams says less than 7,000 in the two divisions. Burnside also made use of but 10,000. Sumner's corps was the strongest, with possibly 15,000 men on the firing line. It is a moderate estimate that 15 per cent of the army was absent on account of straggling or for even less excusable reasons. In the Confederate army the absence for these reasons was even greater, probably 20 per cent.

The loss from straggling was only a part of the shortage of men on the day of battle. The tri-monthly return of September 20, 1862, after Couch and Humphreys had joined, shows:

Present for duty	89,452
Special duty, sick and in arrest.....	10,771
Absent, all causes	79,420

It is sometimes said that the Confederates were more strict in keeping their men at the front, or their men were more patriotic. The data do not show it. A field return of the Army of Northern Virginia for September 30, 1862, shows:

Present	52,790
Absent	87,143

The percentage of absentees was thus considerably greater than in our own army.

General Meade, a very earnest and methodical man, made a return of his corps (Hooker, wounded) on the day after the battle, and again four days later, in order to get a line on the number of stragglers and skulkers. The corps on September 22 numbered 14,509, after losing 2,500 in the two battles. Then

before the battle it should have numbered 16,500 (500 lost at South Mountain) instead of the 10,000 that went into battle.

It seems that more than 5,000 were straggling. But that is not all of the story by any means. The return of September 18 showed but 6,364 officers and men present with the colors, 2,000 having been killed or wounded. More than 1,500 became separated from the command during the battle. Among those absent were 262 officers. Remember, this corps was one of the very best in the army. Meade's own division was made up of the Pennsylvania Reserves; Doubleday's contained the Iron Brigade, and others little if any inferior, as demonstrated on many battlefields.

The army started with about 3,000 wagons, sufficient to carry short rations and forage for seven days. McClellan stated later that his army could not operate more than twenty or twenty-five miles from the railway or canal. We then had 4,000 wagons and 30,000 animals.

The trains had become badly mixed during shipment by sea, and some of them did not join their divisions until after the battle. General Halleck testified that in November the army had 4,000 wagons and 907 ambulances; that there were 31,000 animals, of which 9,000 were used for ambulances and hospital purposes. These latter figures appear to include hospital transportation at Washington as well as in the field.

It is a peculiar thing that no general of the Army of Virginia or of a corps had retained his command until Antietam, with the single exception of Porter, and for him the axe was but temporarily stayed. Hooker, however, had been promoted from division to corps. Pope, McDowell, Banks, Sigel, Heintzelman had been given places of less importance; Reno was killed at South Mountain. And when the army next fought at Fredericksburg, another sweeping change had taken place, and neither general nor any corps commander was the same as at Antietam.

Medical Department.

The medical department of the army was improving; it too had been at the lowest ebb at Manassas. On September 3 McClellan assumed command of the united armies and Jonathan Letterman again became medical director. His position with McClellan and the Surgeon General was strong. He had brought order out of chaos on the Peninsula and was now, for the first time, to test his theories in actual conflict. His well-known ambulance organization had been put in operation by order of

the general on August 2, 1862. The Army of the Potomac had been partially equipped, but those corps from Pope's army (1st and 12th) were still badly off, and much of the supplies of the other corps had been lost or left behind. Burnside's corps (9th) had belonged to neither army and was more illy fitted out than any other. As the army marched very slowly, attempts were made to complete its equipment while on the road, and with considerable success. By the day of the battle there was a reasonable supply of ambulances on hand, organized by corps and divisions. Supplies were generally scanty, as no regular system of furnishing supplies was then in existence, and as no reserve train followed the army. The Sanitary Commission had several wagon loads at hand and got up others very promptly. The zealous agents of this society furnished the only reserve medical supplies of the army.

Field hospitals had not yet been organized, and there was no separate personnel nor equipment for them. There were regimental hospitals, sometimes combined into brigade hospitals. Before the battle Letterman directed that the hospitals be formed by divisions as far as practicable. This was done to a certain extent, but lack of tentage, separate personnel and equipment made this extremely difficult, and in some cases impossible.

The line to the rear was by the National Pike back to Frederick, and from there by train to Baltimore and Washington. Another line was by the pike to Hagerstown, and thence by rail to Harrisburg and Philadelphia.

The main medical base was Washington, and in the vicinity of that point were hospital accommodations for 20,000 men. On August 31 these hospitals contained more than 11,000 patients. There were also extensive hospitals at Baltimore, Philadelphia and New York, and to these most of the wounded from Antietam were sent. During September the hospital capacity of Washington was largely increased; the Harewood Hospital from 1,000 to 2,000, the Cliffburne from 1,000 to 2,000, and the Douglas, Columbia, Mount Pleasant and others in like proportion.

The hospitals in Washington had been located in old buildings, but were now moving out to barracks and tents. When the troops encamped on the hills north of the city moved over into Virginia, their temporary hospitals were converted into permanent ones, and the wooden barracks taken for hospital wards.

These abandoned barracks were the beginnings of most of the great hospitals on Meridian Hill and elsewhere in the suburbs of the city. Barrack hospitals were also constructed about this time in Armory Square and Judiciary Square; but the capacity of all these hospitals was not tested until Fredericksburg poured in its thousands of sick and wounded soldiers.

Movements of the Army.

On September 3 the enemy was along the Potomac, from Alexandria to the Chain Bridge. The Confederates were in the neighborhood of Chantilly. They moved by Leesburg and crossed the Potomac near the mouth of the Monocacy on the 5th and 6th, entering Frederick on the 7th. There they halted a few a few days, having no definite plans. On the 10th they moved westward toward the Potomac.

The Federal corps began crossing the river at Aqueduct Bridge on the 5th, and moved to the vicinity of Rockville. By default the command fell to McClellan, and on the 7th he left Washington to lead the army on a leisurely march toward Frederick. All the corps were up except Porter's, which did not leave Washington until the 12th; one division not until the 14th. The army spread out to cover a front of more than twenty miles, the left following the Potomac. The march was slow. Halleck testified before the Harper's Ferry Commission that it was at the rate of six miles per day. As Frederick was not reached until the 12th, anyone may judge of the speed for himself. Humphrey's division of 8,000 raw troops left Washington on the 14th, and, although held a day at Frederick, reached Keedysville on the forenoon of the 18th.

There were no complicated or unnecessary movements and the slow march aided materially in bringing up much-needed supplies, and in keeping the men fresh for battle. Until Frederick was reached there appears to have been no reason for rapid marching. All the troops were not up and the designs of the enemy were unknown; in fact he had none until he learned of the defenceless state of Harper's Ferry. It will be seen that the march naturally divides itself into two parts: first, from Rockville to Frederick, not in contact with the enemy; second, from Frederick to Antietam Creek, in contact with the enemy.

Wagon trains supplied the army from Washington until Frederick was reached, and in part beyond that point. A Quartermaster depot was established on the east bank of the Monocacy on the 13th and Frederick became the advance base of the

army. The broken Monocacy bridge seems to have been more of an obstacle than would be anticipated. Theoretically it added but four miles to the wagon line. Actually this broken bridge was a tremendous obstacle. Supplies of all kinds piled up, confusion reigned, trains were not returned, and at one time the railway was filled with trains for ten miles; one account says almost to Baltimore. The principal cause of all this was doubtless the lack of able men at the point, to convert it into a terminal, which would have been necessary at Frederick had the road remained uninjured. This incident is chiefly useful in showing how an unexpected obstacle, of comparative minor importance, may upset a whole combination and throw everything into confusion. The rebuilding of this bridge was not completed until Sunday, September 21, four days after the battle.

On September 10 Stonewall Jackson left Frederick for his Harper's Ferry expedition, with six of the nine divisions of the Confederate army. As McClellan's army had nothing to do with this miserable affair, it will not be described. For every one responsible it was a disgraceful thing; for the Confederates it was the chief trophy of an otherwise unfruitful campaign.

McClellan remained two days at Frederick, finally moving, on the 13th and 14th, against Longstreet, who was in the neighborhood of Boonesboro and Hagerstown, and holding the gaps in the mountains. He had not more than fifteen or twenty thousand men; McClellan had all his forces at hand, excepting Humphrey's division, some ninety thousand men, all in good condition and ready for a fight. In no battle except the Appomattox campaign did the Army of the Potomac go into the fight with more confidence of victory than at this time. The leisurely pace was maintained, although Harper's Ferry was now in gravest danger and the best opportunity of the war was presented for beating the Confederates in detail.

In spite of slow marching there was much straggling; this was remarked by nearly all observers. Writers on the Gettysburg campaign of the following year, when the marches were much longer and the weather warmer, do not speak of any great amount of straggling. The natural conclusion is that it was due largely to lack of discipline. General Cox, who had just come from the West, was astonished. He says: "I was shocked at the straggling I witnessed. The 'Roadside Brigade,' as we called it, was often as numerous, by careful count, as our own column marching in the middle of the road. In both the Army

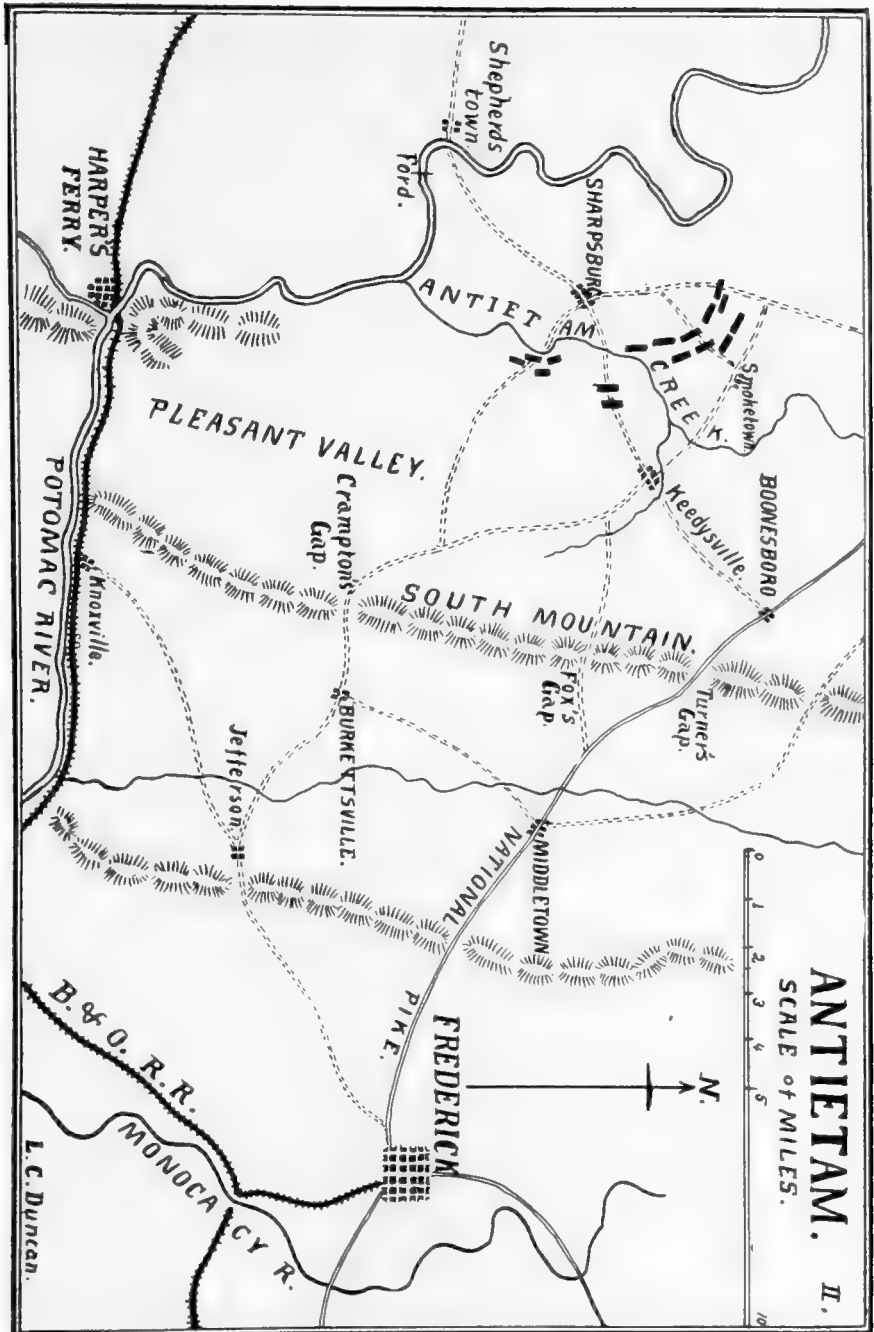
of the Potomac and the Army of Northern Virginia (Confederate) the evil had become a serious one. To lessen it, after Antietam, General Patrick was made Provost Marshal with a strong provost guard, and retained until the end of the war."

Straggling may be in part explained by the number of raw troops. The army had been greatly reduced by battles, sickness and the discharge of short-term regiments. To bring it up to full strength, more than twenty new regiments were added at Washington. For the thousands of these regiments this was the first march. It was officially reported that of a Regiment of the District of Columbia Volunteers, but two men reported at Antietam—the colonel and adjutant. On the Confederate side there was even more straggling, due to long marches and insufficient supplies. Many of the men were also barefoot. In both armies it is probable that from 15 to 20 per cent of the men were absent on the day of battle. To remedy this dangerous evil General Meade suggested the death penalty, and General Lee proposed practically the same punishment.

On September 14 the army, moving west across the parallel ridges, met Longstreet's forces at the gaps. The First and Ninth corps forced Turner's Gap on the Pike, the Sixth Corps had a similar conflict at Crampton's Gap on another road, seven miles south. The Confederates were overpowered at both places and driven back with considerable loss, the battles extending into the night. The casualties were 443 killed, 1,819 wounded. This would have been a notable battle at the beginning of the war, now its magnitude was overshadowed in the greater struggle to come.

On the 15th, all the corps moved on a few miles to the left bank of the Antietam. The 16th was wasted, and on the 17th, after Lee had been given time to capture Harper's Ferry and bring up all his divisions, the great battle of the campaign was fought on the hills about Sharpsburg.

A careful study of the campaign will show that McClellan had remarkable ability. He could organize a great army, equip it and keep it well supplied; he could move it directly to the field of action, and maneuver it with skill and safety in the face of the enemy; what was also of importance, he could retain the confidence of officers and men, even in defeat. But, like Du Maurier's heroine, who had all the virtues save only that crowning one which gives virtue its quality, he had all the military virtues except that most necessary one of all, a fighting



spirit. He lacked what the prize fighters call a fighting heart. When in face of the enemy he habitually saw double, and was overawed by the genius of Lee and Jackson. Ian Hamilton imagined that when the Japanese and Russians were arrayed for battle on the plains of Manchuria, the spirits of the two armies met and wrestled for the mastery before the clash of arms was heard. So it was in this campaign, which was in the last analysis a contest of minds rather than of arms.

Medical Events.

The Medical Department began the march with very inadequate equipment. As Letterman said, the army had to be equipped and supplied while on the march and almost in face of the enemy. But he was undismayed; the problem, though difficult, was not to be given up, but to be faced and solved. When the army marched into Maryland there were very few ambulances with it. Hundreds were still in use removing the wounded from Bull Run, that work not being completed until September 10. All that could be scraped up were taken along, and requisitions were made for others, to meet the army on the march. No one could tell where it would go or when it would meet the enemy. Supplies were also required, to be prepared at Baltimore, and held for telegraphic notice to ship. A number of ambulances were received at Rockville and two hundred at Frederick, just before the battle of South Mountain. On October 1 there were 319 ambulances, with some corps not reporting.

On September 13 Letterman reached Frederick, and, recognizing the place as the proper location, began the establishment of hospitals for the wounded from the expected battles. The enemy had left the place only a few days before and was still east of the Potomac, as if awaiting attack. A large quantity of supplies was requisitioned from Baltimore, and, but for the broken bridge, there would probably have been sufficient stores for the battles. As events came out, part of these stores arrived at the Monocacy bridge, but no officer was there to hurry them on, and there they remained. Other stores were sidetracked or never left Baltimore. Could these stores have been bunched and placed in charge of an energetic officer, they would have had a much better chance of reaching the field. The events leading up to the battle may be described in Letterman's own words:

"It appears that it was necessary to have the troops transported from Fortress Monroe with rapidity, as there was scarcely any baggage sent with them. It resulted that the ambulances and

all the appurtenances were left behind, to be sent up on vessels; some of the vessels never arrived. A large portion of the medical supplies were also left behind, in some cases all but the regimental knapsack; by orders of colonels, quartermasters, and others; in some cases without the knowledge of the medical officers; in others, notwithstanding their protests.

"On the 2nd of September the army came once more under my control, and I found it in a most deplorable condition. The officers were worn down by the labors they had in the meanwhile undergone; a large portion of the supplies had been left at Fortress Monroe, and even much of that which they had brought with them was thrown on the roadside, as I have been informed by commanding officers on the way to join General Pope. The labor expended at Harrison's Landing in rendering the army efficient for active service seemed to have been expended in vain; and before it could be in a condition to render such service again it was necessary that it should be completely refitted. But there was no time to do it, for as soon as the troops reached the defenses of Washington they were marched into Maryland, and no time could be allowed for medical officers again to equip themselves. In a few instances the medical officers who returned with the first troops were able to obtain a few supplies.

"Some corps did not belong to the Army of the Potomac; of the condition of their medical supplies I could know nothing. The medical department had to be, as it were, reorganized and resupplied, and this had to be done while upon a rapid (?) march over different sections of the country, and almost in face of the enemy.

"Before leaving Washington I had ordered a number of ambulances from Alexandria, which reached me at Rockville. While at this place I directed the medical purveyor at Baltimore to put up certain supplies and have them ready to send to such point as I should direct.

"Upon my arrival at Frederick on September 13th directions were given for the establishment of hospitals at that place for the reception of wounded in the anticipated battles; and additional supplies, to a large amount, were ordered to be sent from Baltimore at once. The Confederate troops had been in this city but one day before our arrival, and almost all the medical supplies had been destroyed or taken by them. Just previous to our arrival in Frederick two hundred ambulances were received from Washington, which I distributed to the corps as rapidly as the movements of the troops would permit.

"The failure of the railroad company to forward supplies caused serious annoyance. The railroad bridge over the Monoc-

acy having been destroyed by the Confederate troops, made it necessary to have all the supplies removed at that point. A great deal of confusion and delay was the result, which seriously embarrassed the medical department; not from that cause alone, but from the fact that the cars loaded with medical supplies for its use were on some occasions switched off and left on the side of the road to make way for other stores; and some of the stores, I have been informed, never left Baltimore.

South Mountain.

"The battle of South Mountain took place on the 14th. The village of Middletown, about four miles in rear of the scene of action, was thoroughly examined before the battle began, to ascertain its adaptability for the care of the wounded. Churches and other buildings were taken as far as was considered necessary. Houses and barns, the latter large and commodious, were selected in the most sheltered places, on the right and left of the field, by the medical directors of the corps engaged; where the wounded were first received, and whence they were removed to Middletown; the Confederate wounded as well as our own.

"The battle lasted until some time after dark, and as soon as the firing ceased I returned to Middletown, visited all the hospitals, and gave such directions as were necessary. On the following morning Assistant Surgeon William Thompson, U. S. A., was placed in charge of all the hospitals in the village. Supplies of medicines and stores were in part obtained from the supplies of the army, and in part from Frederick. The task of obtaining food for the wounded was one of still greater difficulty; but it was accomplished by having it brought from Frederick, and by purchasing from people in the vicinity. Great kindness was shown by the citizens, and especially by the ladies, to our wounded, until the hospitals were broken up.

"The battle of Crampton's Gap took place at the same time that the engagement at South Mountain was in progress. The hospitals for the wounded were located at Burkettsville, about a mile in rear of our troops. As in the village of Middletown, churches and other buildings were appropriated for hospital purposes. A sufficient number of surgeons were detailed by Medical Director W. J. H. White of the Sixth Corps, who had charge of the medical department in the action. There was but short time given to prepare the hospitals in either village, as the troops left Frederick and fought both battles on the same day. The same difficulty existed here as at Middletown regarding supplies and stores, and was overcome in like manner. The most reliable reports that can be obtained show 1,214 wounded in these two engagements; those of the Confederate forces not being engaged."

The number of wounded at these battles, as determined later, was 1,819. Letterman's estimate was but two-thirds of the actual number.

These preliminary engagements occupied the attention of a considerable number of medical officers and required a large amount of supplies, both of which were taken from the service of the front, thus weakening it for the great battle to come. Could a service of the rear have taken over this work, the medical service at Antietam would have been more satisfactory. Transport columns and clearing hospitals could have been used had they been in existence; they could have been brought forward from Washington independently of the railway. The country was easily traversed, all the movements of the army were simple and direct, much like those of a maneuver campaign. Little happened by chance, events were anticipated, and the leisurely marches would have allowed the carrying out of a complete scheme of medical service here if anywhere.

The Battle.

A brief description of the battle is necessary to an understanding of the work of the Medical Department. On September 15, the whole army advanced from the gaps of South Mountain to the left bank of the Antietam. On the 16th, the First and 12th corps were above Keedysville; the Second and Fifth in the center and near that place; the Ninth was on the left, in front of the lower bridge; the Sixth Corps and Couch's division remained opposite Harper's Ferry; Humphrey's division was approaching Frederick, reaching there on the morning of the 17th.

About noon of the 16th, Hooker conducted the First Corps across the upper fords and, with some fighting, took position on the Joseph Poffenberger farm, his right extending to the Hagerstown Pike. At midnight Mansfield followed Hooker and bivouacked on the John Poffenberger place, in rear of Hooker and a little more to the east. The other corps remained as they were. The plan was to roll up the Confederate right and then attack their center and left, the plan of Bull Run.

At daylight on Wednesday morning (September 17) Hooker led his men in a headlong attack down the Hagerstown Pike, driving Jackson back to the West Wood, where he brought up his reserves and checked Hooker's advance. Then Hood and a part of D. H. Hill's division advanced and drove Hooker back

to his original position. By seven o'clock Hooker's part was done; in the meantime he was wounded and left the field.

Next Mansfield advanced over practically the same ground and forced Hood back as far as the Dunker Church, this about nine o'clock. There Mansfield's attack lost its impetus. Mansfield was killed early in the fight. Greene's division claims to have held its place in the West Wood near the Dunker Church until noon. Finally all went back toward Hooker's position, but maintained the North and East woods.

Next Sumner came on the field, about ten o'clock. Moving his three divisions *en échelon* he crossed at the fords near the



Neikirk place and advanced westward, at right angles to the previous attacks. Sedgwick with the right division met with little opposition until he reached the West Wood, north of the Dunker Church. Here he was held in front by Hood and attacked in flank and rear by McLaws and Walker. The division was driven from the field in confusion with heavy loss. It took refuge in the hills in the rear with Hooker and Mansfield. This ended the battle on the right. Both sides were pretty well exhausted.

The fight was next taken up toward the center and here the principal advantage of the day was gained. When Sedgwick moved off to defeat in the woods west of the Pike, French's division diverged to the south and assailed the Confederate line

about the Roulette House. Richardson's division came up on his left a little later, striking the so-called Bloody Lane. These divisions drove back Anderson and D. H. Hill in confusion, capturing flags and prisoners and taking possession of the Bloody Lane. The advance reached the Pieper House near Sharpsburg and victory was in sight.

But this attack was not supported and the troops fell back to the Bloody Lane-Roulette House line. Towards noon Franklin's Sixth Corps arrived on this part of the field, but Sumner dissuaded McClellan from making any determined use of it. The battle in the center was now over.

Finally came Burnside's battle on the left. Here Burnside had eight brigades, nominally 14,000 men, of whom about 10,000 made the fight. After several half-measure attempts, the well-known Burnside's Bridge was carried by Cox's Ohioans at one o'clock. At four, three divisions advanced on Sharpsburg and had reached the outskirts of the village when A. P. Hill, marching rapidly from Harper's Ferry, struck the left flank of Burnside's line and drove his whole force back near the bridge. This ended the battle. On the right the North and East woods were held; in the center the Mumma-Roulette-Bloody Lane line; on the left the crossing of the Antietam had been secured. In all these places the army held advantageous positions for further attack.

On the 18th Couch and Humphreys came up with their divisions, but McClellan made no attack. That night Lee withdrew across the Potomac, leaving his dead and about 2,000 wounded on the field. There was no more fighting of importance during the campaign. The armies remained facing each other across the river until November. Finally McClellan crossed and moved slowly toward Warrenton. In November his dilatory course had reached the limit of President Lincoln's endurance, and he was removed from command.

MEDICAL SERVICE AT THE FRONT.

1. **Ambulance Corps**—The ambulance corps, for the first time in any great battle of the war, was fairly well organized at Antietam. Each division had its ambulances collected in one train, commanded by an officer, and under the direction of the medical director. To each ambulance two men were detailed in addition to the driver. There had been some drill and instruction. No obstacle prevented the ambulances from reaching the

field in time. The roads were good, the country, while easily traversed, was yet hilly, with intervening ravines, affording shelter for dressing stations and ambulance work. Had the field been selected for a maneuver, no better one could have been found. The marching and fighting probably came as near to what was planned as in any other campaign of the four years. The number on hand I estimate at something above 300, allowing one to each 175 men actually engaged. The ambulances of troops not engaged were available.

The field hospitals were, as a rule, very close to the firing line. Some houses at the very front—as the D. S. Miller house and the Roulette house—served as hospitals. These places and others were more in the nature of dressing stations on the day of battle, being converted into hospitals later. The fact that there were no compact division hospitals, the wounded being taken to the nearest building or shelter, made the distance to be traveled by ambulances less and their work easier.

The ambulances began their work early and came very far to the front. On the right they advanced as far as the North and East woods; further toward the center, they reached the small stream running from Dunbar's Mill to the Antietam near the Neikirk place. On Burnside's front they were able to cross the bridge and late in the evening worked on the right bank. On the whole front they came up to points but half a mile from the main battle, and three-fourths of a mile from the extreme advance. While wounded were removed during the day, most of this work was done during the following night and the next day. Many observers noted that the ambulances did more work and the litter-bearers less, during this battle, than in any previous conflict.

First Lieut. W. Hopkins, Sixteenth N. Y., in charge of the ambulance corps of Slocum's division, says:

"Most of our badly wounded were brought into the hospitals by dark. We then began collecting the wounded Confederates. We carried them to the field hospitals until midnight, when the surgeons, overcome by exhaustion, were unable to care for any more. We then collected all we could find and placed them in a group, and I directed two Confederates, found hiding behind the rocks, to remain with their wounded comrades, attend to their wants, and keep the fires burning. At sunrise next morning I went with my stretcherbearers to the camp for the wounded Confederates, and found the fires burnt out, six of

the forty dead, and the two men gone to rejoin the Confederate army."

The wounded from the right wing were all removed by two o'clock on the following day. Many of these divisions had received their ambulances but a week previously, and had had no time for drill. The Second Corps, which had the heaviest losses, had also the best ambulance organization, in charge of Captain J. M. Garland. The ambulances of this corps did not stop until all wounded were removed from the field. The hospitals were quite close, except those of Sedgwick's division, in Keedysville.

The troops on the left (Burnside's Ninth Corps) had the poorest ambulance organization; yet all the wounded from this part of the field were collected by the evening of the day following the battle. It may be said that the whole field was cleared within twenty-four hours. This was by far the best record made in the Army of the Potomac to that time. It was commented on favorably by all observers and the new ambulance corps was hailed as an unqualified success.

For the wounded in advanced positions, and between the lines where they could not be reached by either side, there was an informal truce on the night after the battle and the next day. Some few wounded remained within the enemy's lines until the 19th. It has been stated that a truce was asked by one or the other general for this purpose, but I find no record of it. I believe that General Lee sent a flag of truce on the 19th, asking that his surgeons left behind with the wounded be not considered as prisoners of war.

The ambulance corps did not collect all the wounded. Comrades, both officers and men, brought in many, at least as far as the ambulances. It was a point of sentiment and honor among the regiments not to allow their men to lie suffering on the field. General Newton N. Curtis, then a captain in the Sixteenth New York, says:

"We were on the ground over which both armies had advanced and retreated more than once (near the East Wood) as shown by the large number of blue and gray laying where they had fallen. In the twilight the resting soldiers were undistinguishable, for passing men had spread blankets over the dead. As the night advanced the Confederate pickets permitted us to go near their lines to carry off those whose cries would have softened the most hardened heart. I went to the front after the company had bivouacked, to bring to the surgeons such men as I could reach. Others of the regiment were similarly em-

ployed. * * * * On the 19th we found the body of Lt.Col. John L. Stelson, Fifty-ninth New York, near the most advanced position reached by Sedgwick; his last order when striving to avert the growing confusion was, 'Rally on the colors.'"

General Newton, himself six feet seven inches in height, makes the curious observation that of all the men of his regiment, six feet or over, who went into battle, ninety-nine per cent were killed or wounded.

In this battle a great variety of ambulances were used. The one-horse, two-wheeled ambulance, rather aptly called "avalanche" by the soldiers, still survived, but disappeared soon afterwards. The great four-horse ambulance, a sort of converted army wagon, was also in use. The army had not yet settled down to the light two-horse ambulance that was generally used in the latter part of the war, and was enjoined by the general ambulance order of 1863. The ambulance work was the best work that was done at the front by the medical department in this battle.

Supplies and field hospitals were still in a chaotic condition, as at Bull Run and on the Peninsula.

2. Supplies—Letterman telegraphed for supplies on the evening of the battle and they were sent from Washington promptly; that is, they were turned over to the Quartermaster department for shipment. They got as far as the Monocacy Bridge, where they halted. The first of these supplies reached the field on Saturday, the main portion not until later.

Dr. Agnew of the Sanitary Commission says:

"Some blame for the non-arrival of stores lies in the fact that of all the forty or more surgeons sent, not one considered himself charged with the function of hurrying anything forward but himself; the result being that plenty of surgeons got upon the ground, but almost destitute of necessary appliances. This I also attribute, not so much to want of zeal on the part of the surgeons, or of ability to recognize the emergency, but to inability on the part of the central bureau to command the necessary transportation.

"I undertake to say that nearly every barn, and hospital, and cluster of wounded over the wide extent of the late military operations was receiving most essential relief from the commission, while the regular medical stores lay at Monocacy Bridge. I solemnly affirm that great loss of life has occurred, and will occur, among the wounded, as the direct result of an inability on the part of the medical authorities to furnish, by rapid and independent means of transportation, the medical and surgical

appliances needed within the two days immediately subsequent to battles."

The Sanitary Commission started supplies from Washington on Wednesday night and got them there two days ahead of the regular supplies, because the Commission had its own transportation. One of the Sanitary agents says:

"On Friday we went on with stores of beef stock, stimulants, and surgical dressings and visited barns and farmhouses within a mile and a half of headquarters. Everywhere we were asked for chloroform and opiates, instruments and bedpans, everything in fact required for the wounded except the coarse food furnished by the Commissary, and the comforts provided to the extent of their ability by the inhabitants, who had been previously nearly stripped by the Rebels."

Judged by the commendatory notices, the people here were more generous to the sick and wounded of the army than those in Pennsylvania the next year.

With the restoration of the railway bridge on Sunday, supplies arrived in abundance, evacuation of the wounded began, and there was no more complaint of a shortage of medical supplies.

3. Field Hospitals—There were at Antietam no division field hospitals, as we now understand them; hospitals on wheels, that can be moved rapidly and set up as well on a bare plain as in a village. There were seventy-one field hospitals, all extemporized in houses, barns and other buildings which offered shelter. At some of them the only equipment was what the surgeon and his orderly carried on their persons; others had medicine wagons and drew supplies from the regimental wagons. As a rule there was a fair supply of medicines and dressings; but little or no clothing, bedding, tentage, food, or even cooking utensils.

The Sanitary Commission reported that this was due to three causes: 1, lack of time on leaving Washington; 2, breaking of the railway; 3, lack of independent transportation for the Medical Department. The Commission declared that if the Medical Department had possessed transportation of its own, it could have sent supplies direct by wagon train, instead of intrusting them to the Quartermaster to be shipped by rail when they had to take their chances with all other supplies. The Commission urged loud and long that independent transportation be given the Medical Department. This was done later; each division in 1864 had fourteen to eighteen wagons for field hospital and supplies, and

a large reserve train carried reserve supplies for the whole army; all under control of the Medical Director.

As the army was in position (except Franklin) on the evening of the 15th, as the marches had been slow and the roads good, there was nothing to prevent the hospitals being in readiness when the battle began on the 17th. Everything had proceeded in a slow and leisurely manner, with only the battles on the fourteenth which slightly interfered with orderly procedure.

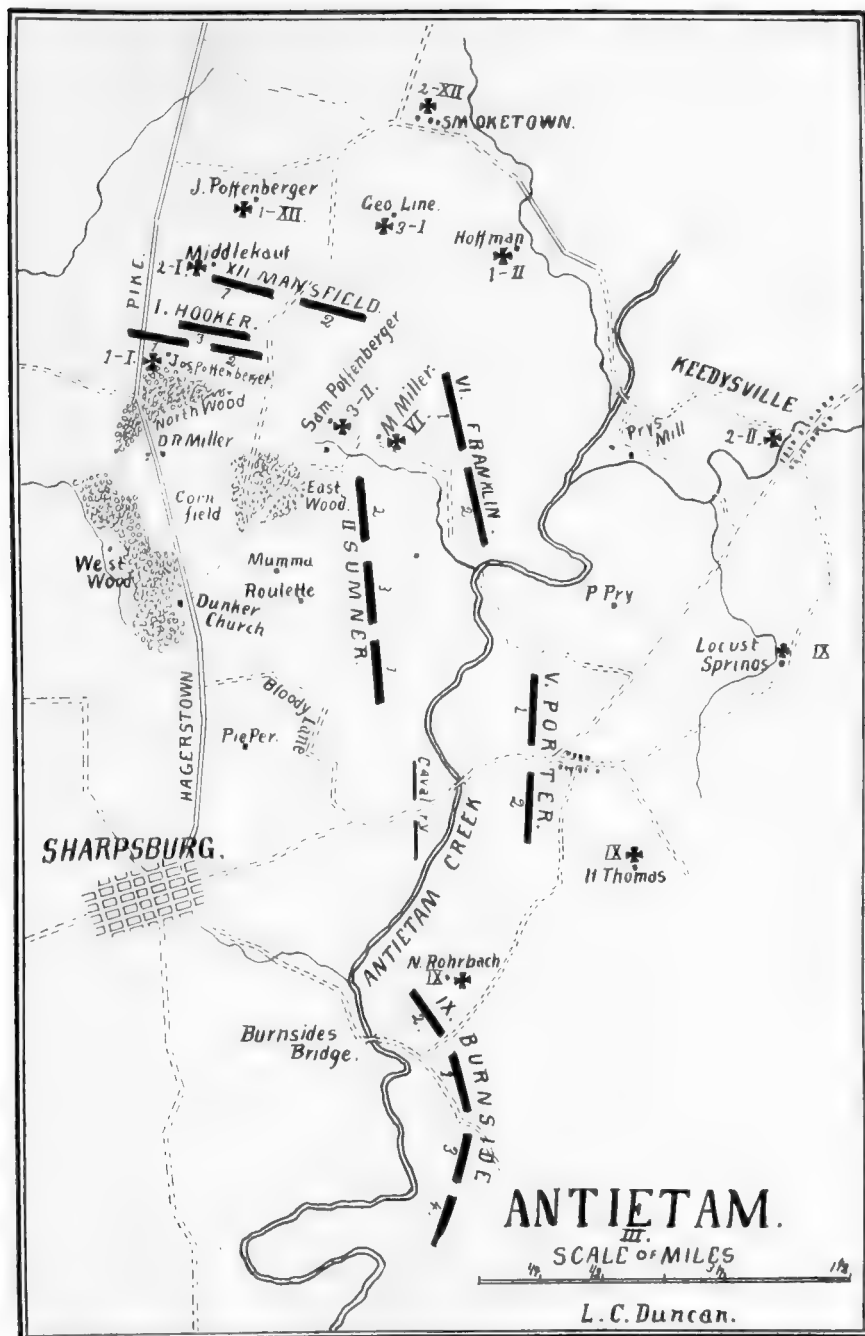
The hospitals were mostly located on the right bank of the Antietam, and very close to the battle lines.

Letterman appears to have had the confidence of McClellan and to have known the proposed plan of battle, which was carried out without change, except as the columns were checked by the enemy. He says:

"As soon as the nature of the country and its resources for hospital purposes could be ascertained, and when a conception was formed of the nature of the anticipated battle, and the positions to be occupied by our troops, directions were given to the corps medical directors to form their hospitals as far as possible by divisions, and at such distance in rear of the line of battle as to be secure from the shot and shell of the enemy; to select the houses and barns most easy of access, and such as were well supplied with hay or straw, and water; and where circumstance would permit, to designate barns as preferable to houses; as being at that season of the year well provided with straw, better ventilated, and likely to enable the medical officers with more facility to attend to a greater number of wounded; and to have all the hospital supplies taken to such points as were selected. These directions were generally carried into effect, and yet the hospitals were not always beyond the range of the enemy's guns. Very few hospital tents could be obtained, owing to the haste with which the army marched from Virginia into Maryland; but the weather was such as to enable the wounded to be cared for without them."

It is to be hoped that his directions were couched in shorter sentences than his report. On account of the lack of tents the wounded were collected in houses and barns; before the contest ended, every building between the Antietam and the Potomac was filled with wounded men, while hundreds lay under straw shelters, in the shade of orchards, and wherever there was shelter or shade.

The location of the principal field hospitals is shown by divisions on Map III. Hospitals not being compact organizations at that time, it is possible only to give the locations of the principal



ones—the stations of the medical directors of divisions. Each of these hospitals was the nucleus of a group of hospitals, occupying all the neighboring buildings. Also the distinction between dressing station and hospital was not then clear; many small buildings retained their wounded for several days, a thing that did not occur later.

The First Corps (Hooker) crossed at the upper fords and formed for battle near the Joseph Poffenberger place. The field hospitals were located at the White House (Geo. Line), the Middlekauf house and the Joseph Poffenberger house, with subdivisions and branches in all the surrounding houses and barns. As nearly as I can make out, these were the hospitals of Meade's, Rickett's and Doubleday's divisions respectively. The White House was the largest of these hospitals, caring for a thousand wounded. It was the hospital of the Pennsylvania Reserves. About 1,600 were treated in all these hospitals. When General Hooker was wounded he was taken to the P. Pry house near McClellan's headquarters.

Mansfield followed Hooker into battle. The hospitals of his corps (Twelfth) were located at Smoketown for Greene's division, and at the John Poffenberger house for Williams' division. These hospitals were in rear of the others and received only about six hundred patients. Naturally the wounded of the First and Twelfth corps were greatly mixed; all these hospitals had wounded from both corps, as well as from Sedgwick's division of the Second Corps.

Next on the field came Sumner's large Second Corps, with Sedgwick, French and Richardson in line from right to left. Sedgwick's division hospitals were in Keedysville, with extensive branches at Pry's house and mill, the Hammond house and other places near the Upper Bridge. The hospitals of these divisions do not appear to have followed the troops across the ford, but to have crossed at the Upper Bridge and kept on to the west. These hospitals cared for about 1,500 wounded.

The hospitals of French's division were located in and about the Sam Poffenberger house. This house was in a ravine, close to the front, but well sheltered from fire. This hospital sheltered 1,400, mostly in some old barns and temporary sheds of rails and straw. A number of pictures of these barns and straw shelters have been preserved. Many Confederate wounded were also treated here.

The hospital of Richardson's division was at the house of

J. Hoffman, with branches in other houses near by. It sheltered or attempted to shelter about 1,200 wounded. The Sanitary Commission centered its work here and did a large portion of the work of this hospital. General Richardson, when wounded, was taken to the P. Pry house, where he died some weeks later.

All these hospitals show a curious tendency to drift to the right, that is, to the north. Considering that the main line of advance was from east to west, and the retreat would have been to the east, the reason for this phenomenon is not apparent; it may have been intuitive. While it is seen now that it was hardly possible for McClellan to have been defeated, it was believed by the whole army at the time that the Confederates had



superior forces. Their strength was estimated at from one to two hundred thousand men. The lowest and most careful estimate placed their forces at 97,000 men of all arms. Had such been the case, defeat was not by any means improbable. Providing for possible defeat, it seems that only as many field hospitals should have been located west of the creek as were absolutely necessary. Today they would all be located east of the creek, until the contest should be decided.

Franklin's corps did not come on the field until towards noon and but a portion of one division was engaged. A hospital was established at the house of Michael Miller; this hospital was generally known as the Brick House Hospital. Dunbar's Mill nearby was also used as a hospital. These hospitals cared for some three hundred wounded.

General Fitz John Porter's Fifth Corps was not engaged seriously.

Burnside's battle was fought near the Lower Bridge and in front toward Sharpsburg. The field hospitals were at the house of F Rohrbach; the house of M. Thomas, farther back toward the hills, and at a place called Locust Grove, or Locust Springs, on the farm of George Goeting, near Keedysville. They cared for eleven hundred of the eighteen hundred wounded reported from Burnside's corps; some were cared for in Keedysville and some were carried directly to Middletown and Frederick.

I do not wish to give the idea that everything in a medical way at Antietam was carried out in an orderly and satisfactory manner, for this was not the case. The time for such conditions and results had not yet arrived, and there is ample evidence of many defects in medical matters. A Mrs. Holstein, who acted as a nurse in many field hospitals, and in 1866 wrote her recollections of hospital life, gives rather a somber picture of Antietam. She said:

"We found the wounded still scattered over the field. At this time they were all under some kind of shelter. A sad want of suitable food and medical supplies was still felt. Those were fortunate who were in the barns, where they were sure of a little hay or straw on which to rest their shattered limbs; while many lingered a few days with no other bed or pillow than a knapsack. * * * Upon one end of the piazza at Locust Grove lay Lieutenant Williams of Connecticut; for three weeks he lingered here. That same piazza had been thickly strewn with the wounded and dying ever since the battle. In the house were several officers, all seriously wounded. In a miserable little log house near the Potomac thirty men lay on the floor, ill with fever. Some had a little straw but no pillows; this house was the counterpart of many. The churches and half the houses in Sharpsburg were crowded with our wounded troops."

Rev. I. O. Sloan of the Christian Commission, who took two loads of supplies, wrote in his report:

"We arrived in Middletown on the morning of the seventeenth, here we found wounded men coming in from the battle-field (on the road to Frederick), some with fingers shot off, arms broken, wounded in the head, covered with blood.

"The little church in the main street was already filled with our wounded, as also some of the houses opposite. * * *

"As we hurried along to where the two armies were engaged we frequently had to stop and give of our supplies to the wounded men whom we met in ambulances, and who lined the road, hobbling along as best they could, to find some temporary hospital.

"At Keedysville several houses were filled with wounded.

We halted at the last one, used as a hospital by Sedgwick's Division. Every room in the house was filled with wounded, and every spot almost in the yard. This hospital was in charge of Dr. Houston, a good man who was trying to do all he could, but they had as yet received no stores, and were entirely without anything to eat. We gave them what we could spare.

"From the hills a little beyond here the conflict was plainly visible. All day they were still bringing in wounded to this place * * * *

"Nearly every farmhouse and barn in all that region was made a hospital; we visited all and left some supplies. On



Shelter for wounded at Antietam

Sunday we established ourselves at the Hoffman House (hospital of Richardson's Division, Sumner's Corps).

"In every spot here—the barn, the carriage house, sheds, strawstacks, orchards, and indeed everywhere—were to be seen wounded and dying men. * * *

"A great proportion of the sufferers were youths from sixteen to twenty-one."

A brief but first-hand picture of the field is given in the report of Dr. Cornelius R. Agnew of the Sanitary Commission:

"The wounded were mostly clustered about barns, occupying the barnyards, floor and stables; having plenty of good straw, well broken by the power threshing machines. I saw fifteen hundred wounded men lying upon the straw of two old barns within sight of each other (probably the hospitals of French's Division, Sumner's Corps). Indeed there was not a barn or farmhouse, or store, or church, or schoolhouse, between Boonesboro, Keedysville, Sharpsburg, and Smoketown that was not gorged with wounded—rebel and Union.

"Even the corncribs, and in many instances the cow stables, and in one place the mangers were filled. Several thousand lie in the open air upon straw, and all are receiving the kind serv-

ices of the farmers' families and of the surgeons. But everything in the way of medical supplies was deficient; poor fellows with broken and lacerated thighs had to be carried out of barns into the open fields to answer to a call of nature. * * *

"Concentrated foods are also scanty; in fact everything wanting that wounded men need, except a place to lie down, and the attention of personally devoted surgeons."

The most notable death at Antietam was that of Major General Joseph K. Mansfield. Mansfield was sixty years old but rode his horse at the head of his corps. Just as the line passed the fence running from the D. S. Miller house to the East Wood, he rode to the front of the Tenth Maine, believing the men to be firing on Duryea's brigade and beckoning them to cease firing. He halted in front of Company C and Captain Burnham pointed out to him the gray coats of the enemy. The General said, "Yes, you are right," and turned to the rear. A volley was fired and he was hit. He tried to put his horse over the rails but the animal had been severely wounded and failed. As he dismounted a gust of wind blew open his coat, disclosing a wound of the body. Some men of the regiment carried him back through the woods (North Wood?) to the Smoketown road, where they found an ambulance to convey him to a hospital.

Surgeon Thomas Antisell, Medical Director of the corps, made the following brief report of Mansfield's wound and death to the Surgeon General:

"General Mansfield was wounded by a rifle bullet through the right breast, about 6 a. m. on the 17th, and died on the 18th at 8.15 a. m. Bullet entered between spine and scapula of right side and passed out two inches above and to outside of right nipple, between 3rd and 4th ribs.

"The wound bled at first freely from posterior wound, and effusion into pleural sac augmented rapidly during the night of the 17th. He died of exhaustion."

Surgeon W. J. H. White, U. S. Army, Medical Director of the Sixth Corps, was killed on the field by a shot from the enemy. He was the only regular medical officer killed in battle during the war. Assistant Surgeon Revere of the Twentieth Massachusetts and Assistant Surgeon A. A. Kendall of the Thirtieth Massachusetts were killed while accompanying their regiments into battle.

I have endeavored to secure the personal experience of some medical officer who took part in this campaign, but for most of them it is now too late. General Alfred A. Woodhull, now re-

tired, was then an assistant surgeon in the regular army and acting surgeon of the Second Infantry—usually in charge of several regiments—of Syke's division, Fitz John Porter's corps. A part of this division crossed the Antietam at the Middle Bridge during the afternoon and engaged the enemy along the road to Sharpsburg. Woodhull says:

"In the afternoon, I should say between 2 and 3 o'clock, the Second Infantry crossed the bridge, moved into the fields on the left, where there had been cavalry in the morning, and then marched straight to the front toward a battery that was on the sky line, not far from the point marked National Cemetery on present day maps. The field was perfectly clear, I think it had been moved, and the surface was moderately rolling with a general slope toward the creek. I started out with the regiment, dismounted, and as we advanced I saw that we should draw fire as we crossed a certain rise. So I purposely dropped behind, to cross after the fire on that point slackened. That was successfully done. But I had hardly crossed the crest myself when I saw walking along the road toward the creek Lieutenant McKee, Second Infantry, apparently wounded. I crossed over to him and found a triangular piece of shrapnel, about three-fourths of an inch on a side, with one of its angles imbedded in the sternum. He was also feeling some shock. I turned back with him, looking for a convenient place to dress the wound, but found none until we came near the bridge. * * * Approaching the bridge I found a small house on the south side of the road, that had been abandoned, and that I used for a dressing station—one could hardly call it a hospital—and there cared for the wounded who drifted back, until it was dark and after.

"No hospital site could be selected in advance, because no one could possibly foresee the direction in which we might move. Assistant Surgeon William R. Ramsey, who was attached to the Eleventh, came there also and we worked in company. This was done by both of us our own initiative.

"We were practically quite free from control, in the sense of detailed direction. That was also true through the whole of my service with the Army of the Potomac (until the last of November, 1862). At first it depended on the lack of organization, and both then and later it followed because we were regulars. I do not say this boastfully, but I do think it was assumed that, as we were intelligent men who had been carefully selected and were living in an atmosphere of discipline, we could be depended on to look out for the service in a matter-of-fact way; while the volunteers, even after a year's life under canvas, required supervision and direction, while the tendency to lack of

control the much greater size of the respective commands and the heavier sick lists, all called for official regulation.

"Thus at Second Bull Run, on the second day, when it was evident that we were in for it, several of us—four, I think—rode together to select of our own motion a fit place for field work. We found what we thought would answer and had barely moved from it, returning to our commands, when a solid shot, or an unexploded shell, plumped down exactly where we had clustered in consultation. One of Longstreet's batteries, it must have been, on higher ground, had espied us and paid us the compliment of thinking that we were a general and his staff. We did not get a common spot that day, and for myself, although with the troops, and there were many wounded men, we moved from point to point so rapidly that it was impossible to care for any on the field.

"To go back to Antietam. If you will turn to page 634 (B. & L.) you will find the one-story house near the end of the bridge as my station, while the ridge in the background (west) represents the Rebel line that challenged us. I think that ambulances came from the rear to the bridge and beyond and carried off the portable cases, and that the work was going on all night."

Oliver Wendell Holmes, in his story "My Hunt After the Captain," has left some vivid pictures of scenes following the battle, and incidentally brought out the confusion that existed among the wounded. His son, a captain in the Twentieth Massachusetts, and now a Justice of the Supreme Court, was wounded in the neck in this battle. That night the elder Holmes received a telegram telling him of his son's injury, and he started at once for the field, accompanied by another father who had a son wounded (Lt. Col. Wilder Dwight, Twentieth Massachusetts), and was taking a surgeon with him. He went first to Philadelphia, but although several wounded officers had already reached that place, his son was not among them. By noon of the 18th he was in Baltimore, and as he proceeded toward Frederick a growing company of fathers, brothers, wives and mothers was found to be journeying toward that point, on the same errand as himself. When he reached Frederick he found many wounded, but no one could tell him anything of his son. So he procured a wagon and set out for Middeltown; along the way he first saw wreckage of the battle.

"The road was filled with straggling and wounded soldiers. All who could travel on foot, multitudes with slight wounds of the upper limbs, the head or face—were told to take up their beds and walk. Just as the battlefield sucks everything into its

red vortex for the conflict, so does it drive everything off in long divergent rays, after the fierce centripetal forces have met and neutralized each other. * * * The slain of higher condition, embalmed and iron-cased, were sliding off on the railways to their far homes; the dead of the rank and file were being gathered up and committed hastily to the earth. The gravely wounded were being cared for hard by the scene of conflict, or pushed a little way along to the neighboring villages; while those who could walk were meeting us at every step. It was a pitiable sight, truly pitiable; yet so vast, so far beyond the possibility of relief, that



GERMAN REFORMED CHURCH IN KEEDYSVILLE, USED
AS A UNION HOSPITAL. FROM A PHOTOGRAPH
TAKEN IN 1866.

many single sorrows of small dimensions have wrought upon my feelings more than this great caravan of maimed pilgrims. At intervals a dead horse lay by the roadside, or in the fields, unburied. Full in the middle of the road, caring little for what they met, came long strings of army wagons, returning empty from the front for supplies."

That evening Middletown was reached and a search made of all the hospitals. The principal collection of wounded was in the churches. Boards were laid over the tops of the pews; on these some straw was spread and on these the wounded lay,

with little or no covering other than such scanty clothing as they had on. The son was not found here either, and on Sunday morning, the 21st, Dr. Holmes set out for Boonesborough and Keedysville. At the latter place he found wounded by the thousand, filling the town and all the houses in the surrounding country; but no one knew anything of the captain, and he was told that the only way to find him was to search every hospital and house. This he did, and finally the place where the son had been was found; but he had departed for Hagerstown, presumably on his way home. So the good doctor went back around by Baltimore to Harrisburg and searched the hospitals there, only to find that he had not left Hagerstown. Finally on Thursday, the 24th, the Captain reached Harrisburg and his father met him there, six days after the battle. The wound did not prove serious.

The whole story is well worth reading for its pictures of the times. The fact that he could determine the whereabouts of his son only by going through all the hospitals, bed by bed, and scanning every face, gives much information as to the keeping of records. Medical inspectors, ten days after the battle, could give no estimate of the casualties; the earlier lists of dead and wounded came from the reports of companies and regiments, not from medical officers. In this portion of the work of the medical department there was room for improvement.

Burial of the Dead.

Burial of the dead was begun on the day following the battle and completed by Sunday, the 21st. Details were made from the various regiments, each detail gathering up the dead of its own command. In this manner the sad duty was done in an orderly manner, and it was possible to identify a large portion of the dead. A man's own comrades would naturally take a greater interest in finding his body and giving it decent burial, and in marking the grave, than would strangers. The Union dead were as a rule buried in separate graves, no small undertaking when the dead numbered more than two thousand. When Dr. Holmes visited the field on Sunday he saw no bodies, but many newly-made graves. In some cases the graves were in groups which were fenced in.

Confederate prisoners were employed in burying their own dead, only a part of which had been interred before the retreat. Many of these were buried in great trenches, from fifty to a hundred in one trench.

After the battle hundreds of northern people came to Sharps-

burg in search of dead or missing relatives or friends. The missing in this battle, however, were few; less than in any other great battle of the war. For weeks the road to Hagerstown was a continual funeral procession. Here came the father or brother from New England, searching for his dead; here also came the wife seeking the grave of her soldier husband. From the field of Antietam the maimed bodies were carried back, to rest throughout the ages by the homes from which they had gone out to



The rear of Antietam
L. C. DUNCAN

battle for their country. It is said that more than a thousand were disinterred at that time.

Medical Service of the Rear.

When the battle closed there were in round numbers ten thousand wounded men at Antietam, fifteen hundred at Middletown and five hundred at Burkettsville. There were about two thousand wounded Confederates at these places to be cared for, making fourteen thousand in all. There were also sick, accumulating at a rate of four or five hundred a day. By the evening of the 18th they had all been collected and placed under some kind of shelter. Had the army been provided with a modern sanitary equipment Letterman would now—or earlier—have called for clearing hospitals and transport columns. The conditions were very favorable to the work of such organizations. As he knew

nothing of these things, he had, on the evening of the battle, telegraphed to the Surgeon General, asking for one hundred surgeons and the medical supplies heretofore mentioned. Some seventy surgeons were started next day and reached Frederick; some were stopped for work there, others were pushed on to the battlefield. These surgeons and supplies took the place of clearing hospitals, organized and controlled, however, by officers detached from the army. Physicians and surgeons came in from all parts of nearby states, even from New England; the army was not engaged in further operations and remained in the vicinity; thus there was no shortage of medical men to care for such an unprecedented number of wounded.

1. **Transportation**—For transportation from the field to Frederick, all the ambulances and spare wagons of the army were used, but many hundreds of the less severely wounded went on foot. The road used was the old National Pike, by way of Boonesboro and Middletown; a fairly good road at that time. The massive stone bridges on this road were not destroyed by the Confederates.

Provision for the journey was carefully made. Letterman says:

"The removal of so large a number of wounded was no small task. The journey to Frederick in ambulances was tedious and tiresome, and often painful to the wounded men. It was necessary that they should halt at Middletown for food and to take rest; that food should always be provided at this place at the proper time, and for the proper number; that the hospitals at Frederick should not be overcrowded; that the ambulances should not arrive too soon for the trains of cars at the depot at Frederick, the bridge over the Monocacy having been rebuilt (September 21st); and that the ambulance horses should not be broken down by the constant labor required of them. With rare exceptions this was accomplished and all the wounded whose safety would not be jeopardized by the journey were sent carefully and comfortably away."

Wagons were hired from citizens for hauling medical supplies onto the field, in order to avoid the use of ambulances for that purpose.

While hundreds of wounded struggled along the road to Frederick from the 14th on, the regular evacuation of the wounded appears to have not begun until about the 20th. The Confederates did not evacuate the field until the night of the 18th and the Monocacy bridge was not completed until the 21st.

Ambulance trains were now kept running until all but about one thousand of the wounded had been removed. I am unable to learn precisely how many days were required, but believe the evacuation was completed by the 25th.

For those unable to bear transportation, two large tent hospitals were constructed on the field: one at Smoketown, for 750 patients; and one at Locust Springs, for 450. These hospitals were continued in use until the following spring—March 30, 1863.

A portion of the wounded were evacuated by way of Hagerstown, to Harrisburg and Philadelphia. Dr. A. J. Smith was



Roulette Barn.

Field Hospital, Antietam.

in charge of the hospitals at that point, which were in Lyceum Hall, the Washington Hotel, and the Courthouse. On the 19th there were 150 patients in these hospitals and 150 more had been sent on to Harrisburg. They were dependent on the citizens for nearly all their supplies. On September 22 General Treasurer Geo. L. Strong of the Sanitary Commission was in Hagerstown and found the floors of the buildings covered with wounded men, with no beds or bedding. He at once advanced six hundred dollars to Surgeon Smith with which to fit up these buildings. On this date a train of 347 wounded left for Harrisburg.

One of the faults of all field and other extemporized hos-

pitals at this time was lack of hospital funds. The hospital fund system of the regular army had been extended to regimental hospitals, but when a new hospital was organized in the field, it had no fund to start with.

It is stated that of the seventy different hospitals at Antietam not one had a dollar of funds. While surgeons sent to towns to organize new hospitals must have been furnished with funds or credit, they seem to have made purchases very sparingly. They appear to have been closely restricted.

The Confederate wounded at South Mountain were moved across the river to Shepherdstown as rapidly as possible, mostly in rough wagons, and on foot. Ambulances were so scarce that when General Hood captured a half dozen at Manassas he tried to hold them for his own division and did so until placed in arrest. Mary Bedenger Mitchell, a Southern woman, has given an account of the wounded at Shepherdstown, from which a few extracts are here inserted:

"Monday afternoon we suddenly found the wounded in our streets, what seemed an endless line of wagons discharging their piteous burdens. There were no preparations, no accommodations, not even a courier in advance to announce their arrival. The men could not be left in the streets; men ran for keys and unlocked unused buildings. Hay was brought and covered with blankets; on these improvised beds the sufferers were placed, and the next question was how to dress their wounds. No surgeons were to be seen. A few men detailed as nurses had come but they were incompetent. Our women set heartily to work; washed, bandaged, bathed and did what they could without knowledge or experience. Every housekeeper ransacked her stores for material for bandages. The doctors came by and by; some rough surgery was done, mostly amputating. (These surgeons did not impress Mrs. Mitchell favorably.)

"This was Monday, the day after the battle of South Mountain. Next day fresh wounded poured in, and they worked all day. This day would have brought despair for food, but an apology for the commissary arrived; also some additional doctors, most of whom might as well have stayed away.

"On Wednesday the battle began again, this time so near that the roar of artillery and the rattle of musket fire was heard from dawn to dark. The wounded before had been but a prelude. Now they came in thousands, absolutely deluging the little country village. In the streets was noise, confusion, dust, throngs of stragglers, horsemen, wagons blocking each other; and a continual din of shouting, swearing and rumbling, in the midst of which men were dying, fresh wounded arriving, surgeons am-

putating and women going in and out with bandages, lint, medicines and food. The wounded continued to arrive until the town was quite unable to hold all the disabled and suffering; they filled every building and overflowed into the country round. Those able to travel were sent on to Winchester and other towns, but their removal seemed to make no appreciable difference.

"On Thursday night we heard more than the usual sounds, and in the morning we found the Confederates in full retreat. General Lee crossed the Potomac under cover of darkness and moved toward Kearneysville. General McClellan followed to the river and began shelling the retreating army, and consequently the town. What before was confusion grew infinitely worse. The roads were thronged, the streets blocked, and the wounded started off in crowds. In vain we implored them to stay. They replied that the Yankees were crossing, the town was to be burned, that we could not be made prisoners but they could, that anyhow they were going—and go they did. Men with cloths about their heads went hatless in the sun; men with injured feet limped shoeless on the stony road; men in ambulances, wagons, carts, wheelbarrows, on stretchers, or supported on the shoulder of some comrade—all who could crawl went, and almost to certain death. They could not go far, they dropped off in the country houses; but their wounds had become inflamed; erysipelas or gangrene followed and long rows of nameless graves bear witness to the results."

As a matter of fact none of McClellan's troops entered Shepherdstown until September 29, when they captured and paroled about six hundred wounded still remaining there, presumably cases not transportable.

On September 21 General Lee, in an order directing operations at Winchester, said:

"Hospitals for the sick and wounded will also be provided by securing neighboring barns and other suitable buildings, and surgeons placed on duty with them. Surgeon Guild, Medical Director, will proceed to Winchester and organize the depot."

The Confederate army moved to the vicinity of Winchester during the last week of September. On October 2, in a letter to Jefferson Davis, General Lee said:

"I have been endeavoring to move back to Staunton everything captured at Harper's Ferry, together with our sick and wounded."

Owing to weak transportation, the progress was very slow. The distance that the Confederate wounded had to be transported by wagons in this campaign—from the Potomac to Staunton—was 125 miles. In the Gettysburg campaign the same route was

used, but the distance was increased by the thirty miles from Gettysburg to the Potomac.

2. Advance Base Hospitals—Frederick being the rail-head and advance base of the army, naturally became the location of the evacuation hospitals. I call them evacuation hospitals, but they were something more than that in point of duration, for they were maintained for months, and not closed until the next spring. If we consider an evacuation hospital as a mobile organization, something like a field hospital, but moving more slowly, judging by Antietam we should have to alter our ideas. The hospitals here did not merely shelter the wounded until they could be passed on to the rear; they received the wounded from the field and cared for them until they were finally disposed of by recovery, discharge for disability, death or otherwise. Long before these hospitals were closed, the army had fought another great battle—Fredericksburg. The personnel may have been available at Chancellorsville, but the material was probably worn out and of little further value.

There had been a general hospital at Frederick a year or more, in some stone buildings known as "The Barracks," said to have been built in the time of the ill-fated Braddock. Braddock's column passed through Frederick, forerunner of many martial processions witnessed by the village in these later years. In the spring this had been the hospital of Banks' corps and had some six or seven hundred beds. Assistant Surgeon Robert Weir, U. S. Army, was in charge, with about five hundred and fifty patients, when the Confederates crossed the Potomac. Learning of their threatening position, he impressed vehicles and sent four hundred of his patients to Chester. One hundred and fifty of the worst cases were left behind; they were captured and paroled by Jackson when he entered Frederick on the 7th. When the Confederates in turn evacuated the place on the 10th, they left several hundred men there who were too sick to be carried further. Other sick men were left along the road, four hundred, according to Brinton, at Middletown. When the Union forces entered Frederick this hospital was again occupied and known as Hospital No. 1. Other hospitals, Nos. 2, 3, 4, 5, 6 and 7, were organized in the United States Hotel, Bonsall's Academy, the Lutheran and other churches, a convent and academy, a tannery, schoolhouses and other buildings. The whole had a capacity of 3,500, which was exceeded by crowding. For example, No. 1 Hospital, with a capacity of 600, had 1,000, and fed 1,800, the excess sleeping "somewhere."

Surgeon John J. Milhau, U. S. Army, was placed in charge of all the hospitals, and of medical affairs generally in Frederick, in which position he showed marked ability. All these hospitals were organized and in operation by September 21. But when the wounded began to pour into Frederick, in spite of all preparation, the facilities were entirely inadequate. James H. Peabody, Assistant Surgeon, U. S. V., says in his report:

"The greater number of medical officers have been sent forward to the field, the work for those left in Frederick was almost incessant for a few days. * * * After the battle most of the wounded were hurried to Frederick, and from there those but slightly wounded, after being allowed a night's rest, were transferred to Baltimore and Washington.

"The hospitals in Frederick were densely crowded after the battle, and every available building was used for hospital purposes. Some of those buildings were but poorly ventilated and illy adapted for this purpose; they were given up as speedily as possible. For the first five or six days, owing to crowding, it was almost impossible to keep the sick and wounded supplied with food and other necessities. The greatest inconveniences to which the wounded were exposed was in consequence of not having an adequate number of beds to accommodate the thousands who were pouring in; and those but slightly wounded had to lie on the floor or ground, as they preferred, until the day after arrival, when they were to be transferred to Washington or Baltimore. I have counted as high as 1,200 thus transferred in one train. The crowding only continued for a few days, after which we had ample accommodations and supplies for those left."

The evacuation from Frederick appears to have begun as soon as the bridge was restored, and to have been kept up continuously until all those to be sent away had been removed. A total of 6,362 were removed by way of Frederick; 3,329 to Washington; 1,356 to Baltimore, and 1,627 to Philadelphia. These wounded were transported in ordinary box cars, bedded with straw.

I am unable to determine what, if any, basis was used for determining what patients should be held at Frederick and what sent on to Baltimore. Probably none, the hospitals at Frederick being filled and the remainder sent elsewhere. The statements usually made are that the severely wounded were retained and the slightly wounded sent on. Letterman says a large number of wounded were sent from the field through Frederick to other hospitals, of which no record was kept. There were many officers

and others whose friends were able to spirit them away. Wounded officers appeared in Washington as early as the 19th.

On September 23 McClellan telegraphed Halleck, saying that Dr. Hitchcock and Mr. Croker were at Antietam, acting for the Governor of Massachusetts, who desired the removal of the more severely wounded of the regiments from that state to Boston, or places near their homes.

McClellan recommended that this request be approved, for wounded that would require thirty to forty days for recovery, provided they be certified as suitable cases by the Medical Director. The request was granted by General Halleck and was presumably carried out, at least in part.

This was a common practice with various state agents, and while usually undertaken with the best of intentions, was highly detrimental to the army, which thereby lost thousands of men, who returned tardily if at all. In some cases it appears to have been mere political tactics.

The Sanitary Commission has been blamed for such practices, but I believe unjustly. The efforts of that organization were constantly directed to the ends of keeping the largest possible number of men in the field. No one who studies its endeavors and accomplishments can for a moment believe that its aim was merely humanitarian. Its first and highest aim was to aid the government in prosecuting the war, and no side issues were allowed to interfere with this line of action.

On September 30 there were 2,321 patients remaining in the hospitals at Frederick. On September 27 five hundred hospital tents were received and two large tent hospitals were organized in the suburbs of the place. Camp "A" was organized September 30 and Camp "B" October 20. Each had a capacity of a thousand patients. In all the hospitals of Frederick there were on duty during the month of October 62 surgeons, 22 hospital stewards and 539 nurses and cooks. These hospitals received 3,032 patients during October, many of whom must have been sick.

The army was still in the same locality, not moving away until the last days of the month. On November 1 there were still 2,603 patients remaining. The hospitals at Middletown, Boonesboro, Sharpsburg and Locust Springs were being closed during this time. A sample of the work of the Frederick hospitals is afforded by the following data from the records of Hospital No.

5, opened September 18, 1862, and closed January 13, 1863: Patients received, 1,562; died, 101; discharged S. C. D., 126; remaining at close, 222. The death rate of wounded, 12 per cent, is about the average for the entire war. This was the first hospital to close, the others following during January, February and March, 1863. On April 1, 1863, all remaining patients were transferred to Hospital No. 1, which became a permanent depot hospital, at it had been before the battle.

At Middletown ten buildings were occupied for hospital purposes, from the day of the battle at South Mountain. As there was little bedding, straw was procured and used instead. For cooking, kitchen utensils were borrowed from the inhabitants. Some food was obtained from Frederick, but more by purchase. Medicines and dressings were obtained in the same manner. Stragglers were collected and employed as nurses, guards, for fatigue, etc. Their services were generally unsatisfactory. On September 16 these hospitals contained 1,084 patients, 488 having been sent from the field directly to Frederick. After Antietam, 304 wounded reached Middletown from that field. Evacuation was begun at once and by September 23, 1,388 wounded had been sent to Frederick. Of these 1,100 were sent in ambulances and 280 went on foot. There remained 121, who were unfit for transportation. I presume that the wounded were evacuated from Burkettsville at the same time. There is no record of anything like a permanent hospital at that place. On October 21 there were still 100 patients at Middletown.

A hospital was maintained at Boonesboro for some weeks at least; at the last of September it contained 200 patients. In Sharpsburg the various churches were used as hospitals and these hospitals were maintained until November. The tent hospitals at Smoketown and Locust Springs have been referred to as the main hospitals for transportable cases on the field. These hospitals remained at these places until their patients were finally disposed of. The Locust Springs hospital was closed on January 30, 1863. At that time the Smoketown hospital had 300 patients. This hospital had received in all 2,723 patients, and was not closed until May 20, 1863.

Of all the patients from this campaign, one-half or a little more were sent away to Washington, Baltimore and Philadelphia. Somewhat less than half were treated at the places above named, on or near the field; not for a few days or weeks, but until discharged or no longer in need of treatment. The Confederate

wounded (prisoners) were transferred to Baltimore and to Fortress Monroe when ready for exchange.

Medical Director Letterman strongly favored keeping the wounded near the field when possible, bringing the hospital to the wounded, instead of taking the wounded to the hospitals. He said:

"Immediately after the battle, a great many citizens came within our lines in order to remove their relatives and friends, and in a great many instances where the life of the man depended on his remaining at rest. Their minds were bent on having their friends at home. No greater misfortune could exist, and the results of this battle only added additional evidence of the absolute necessity to wounded men of a full supply of pure air, a supply which cannot be secured in the most perfectly constructed buildings. Within a few yards a marked contrast could be seen between the wounded in houses, barns and in the open air. Those in houses progressed less favorably than those in barns; those in barns less favorably than those in the open air; although all were in other respects treated alike."

These statements of Letterman were true at the time, but antisepsis and asepsis have made them inapplicable today. The wounded should be removed to permanent hospitals, even in cases like Gettysburg, where the field is in our own territory and the enemy retires to a distance. In the enemy's territory there are other reasons for removing the wounded from the vicinity of the army. Letterman's plan of retaining the wounded near the army would be a mistake today.

It was customary, and at that time an excellent custom, to send several independent medical inspectors to report on the conduct of medical affairs after each battle. Inspector E. P. Vol-
lun made a long report on Antietam, commenting on the lack of cooking utensils and food, the lack of independent transportation, the lack of a corps of nurses and attendants, the use of stragglers for nursing, and the excellent work of the Sanitary and Christian commissions in furnishing supplies. He reported that hundreds of wounded were out of doors, but that this was rather an advantage, the weather being fine. On September 24 he was unable even to estimate the number of wounded. He argued that the medical department should have a train of supplies under its own management, as did the ordnance and commissary departments.

United States Sanitary Commission.

The Sanitary Commission reached the field with supplies in

advance of any others, except those carried with the army, and these were short in many divisions. Supplies for the medical department were shipped at once by rail, but were stopped at the broken bridge east of Frederick. There was no medical officer at that point to push them on, and they did not reach the battlefield until the evening of the 20th, three days after the battle. The Sanitary Commission had forwarded two small wagon trains directly from Washington, before the battle, but in anticipation of it; they reached the field on the 19th. Four other trains, dispatched after receiving news of the battle, reached the field as early as the regular supplies, a part earlier. The Commission claimed that it had twenty-five wagon loads of supplies on the ground, at Keedysville and Sharpsburg, before any of the supplies sent by the medical department reached those places. This was in part accidental and was in part due to the broken bridge; but was largely due to the fact that the Commission had independent transportation, while the Medical Department was obliged to turn its shipments over to the Quartermaster, where they took their chances with all other supplies.

What the Commission furnished may be seen from the report of its agent: "Within a week we dispatched by teams from Washington alone 28,700 shirts, drawers, blankets, bed-ticks, 30 barrels of bandages, 3,000 pounds of farina, 2,600 pounds of condensed milk, 5,000 pounds of beef stock and canned meats, 3,600 bottles of wine, and several tons of lemons and other fruits, crackers, tea, sugar and other hospital conveniences."

Another branch of the Commission, operating from Philadelphia and Harrisburg, by way of Hagerstown, sent agents, supplies and money to the field, but they arrived a little later. It is astonishing to read of the amount of alcoholic liquors furnished by these societies. Agent W. M. Chamberlain says he learned that a large invoice of stores had been sent to Chambersburg, including eight barrels of wine, five of whiskey and one large cask of brandy. When he reached Hagerstown there was absolutely no wagons to be found. After a delay he succeeded in procuring three and started for the field with blankets, bandages and miscellaneous stores, including a large cask of whiskey and two barrels of sherry wine. It is a relief to learn that, on reaching the field, all his supplies were quickly exhausted except the liquor.

On September 23, one week after the battle, Frederick Law

Olmsted, General Secretary, wrote to President Bellows: "We are sending more supplies constantly. Four thousand sets of hospital clothing will, by special train from New York, get through to Frederick tomorrow, if money and energy can break through the obstructions of this embarrassed transportation."

The agent at Hagerstown, whose aid was comparatively little, expended four thousand five hundred dollars at that point. These agents opened storehouses at Sharpsburg and Keedysville and filled the requisitions freely and without formalities for all hospitals. Army medical officers did not hesitate to call on them, indeed were only too glad to get their stores until their own should arrive, and also to secure many things not on the medical supply tables.

While the Sanitary Commission, like all such bodies, was inclined to exaggerate its own work and importance, there can be no doubt that, in this campaign, it rendered very great assistance to the medical department; not only on the line of communications, where such societies are now supposed to exert themselves, but even more on the actual battlefield, during the first few days, when the lack of supplies was most pressing. During the later campaigns not nearly so much work was done at the extreme front by the Commission.

In this campaign the voluntary aid societies rendered assistance along certain definite lines. They took little or no part in collecting the wounded or in transporting them to the rear. They did do a certain amount of nursing and dressing, in both field and evacuation hospitals. Many small groups of wounded, in separate houses or barns, were turned over entirely to the Sanitary Commission agents for the time being. But their most important function was to furnish supplies. By authority of special passes they were often able to get to the field before the regular trains. They had an abundance of money with which to hire private vehicles or purchase stores in an emergency. Their supplies were all but unlimited, both in variety and quantity. They were on the field early, established issue storehouses and gave out supplies freely to any medical officer calling for them. They did not wait even to be called on, but peddled supplies from one hospital to another.

The Commission also rendered valuable service at Frederick and Hagerstown, the railheads or clearing hospitals of the army. Wounded transported to such places often lay for hours awaiting trains, and usually with little or no care. The aid asso-

ciations filled these gaps admirably. They readjusted dressings, furnished hot and cold drinks and suitable foods; also blankets, shelter or whatever was necessary for the comfort of the wounded.

They rendered still another service by assisting in preserving the identity of the sick and wounded and notifying their friends. This was a work that was but poorly done by the Medical Department at that time. Men by the hundreds were sent from the field without records, or even a list of names; only so many wounded. When these men died there was often no means of identifying them. The Sanitary and Christian commissions undertook to prepare directories of all the hospitals and did much to fill this want, but did not entirely fill it, as the thousands of nameless graves testify.

Medical Officers of the Army at Antietam.

Medical Director of the Army.....	Surgeon Jonathan Letterman, U. S. A.
Medical Inspector	Lt.-Col. Edward P. Vulliamy, U. S. A.
Medical Purveyor	Asst. Surg. T. J. McMillin, U. S. A.
Medical Director, First Corps.....	Surgeon J. T. Heard, U. S. V.
First Division	Surgeon Peter Pineo, U. S. V.
Second division	Surgeon N. R. Mosely, U. S. V.
Third division	Surgeon Wm. King, U. S. A.
Medical Director, Second Corps.....	Surgeon A. N. Dougherty, U. S. V.
First Division	Surgeon J. H. Taylor, U. S. V.
Second division	Surgeon Houston, U. S. V.
Third division	Surgeon Gabriel Grant, U. S. V.
Medical Director, Fifth Corps.....	Surgeon John McNulty, U. S. V.
First Division	
Second division	
Medical Director, Sixth Corps.....	Surgeon W. J. H. White, U. S. V.
	(killed)
	Surgeon Charles O'Leary, U. S. V.
First Division	
Second division	
Medical Director, Ninth Corps.....	Surgeon W. H. Church, U. S. V.
First Division	
Second division	Surgeon A. T. Watson, U. S. V.
Third Division	Surgeon H. W. Rivers, U. S. V.
Fourth Division	Surgeon W. W. Holmes, U. S. V.
Medical Director, Twelfth Corps.....	Surgeon Thomas Antisell, U. S. A.
First Division	Surgeon Artemus Chapel, U. S. V.
Second division	Surgeon A. Ball, U. S. V.

THE CAMPAIGN OF FREDERICKSBURG, DECEMBER, 1862

*A route through a heavy wood, with muffled steps in the darkness;
Our army foiled, with loss severe, and the sullen remnant re-treating;
We come to an open space in the wood, and halt by a dim-lighted building;
An old church at the crossroads—'tis now an impromptu hospital;
Shadows of deepest black within, just lit by candles and lanterns;
By these crowds, groups of forms, vaguely I see on the floor,
Faces, varieties, postures beyond description, most in obscurity,
some dead;
Surgeons operating, attendants holding lights, the smell of ether
and blood;
The crowd, O the crowd of bloody forms of soldiers—the yard
also filled;
Some on the bare ground, some on planks or stretchers, some in
the death spasm;
An occasional scream or cry, the doctors' spirited orders or calls;
Then I hear outside the order given, "Fall in, my men, Fall in,"
And I speed forth to the darkness,
Resuming marching, ever in darkness marching.*

DRUM TAPS.—*Walt Whitman.*

THE battle of Antietam, September 17, 1863, was followed by a long period of rest for the Army of the Potomac. During the last days of October the army crossed the river and moved slowly southward toward the Rappahannock. Winter was coming on and the rate of progress was so slow that it gave little hope of anything being accomplished before the season should render military movements impracticable. McClellan's dilatory movements were finally ended by the President. While the army was encamped about Warrenton, November 9, McClellan was removed from command and Major General Ambrose E. Burnside installed in his place. This change was received by the army with misgivings. Many thought it a change for the worse, which events proved it to be.

Burnside decided on an overland advance to Richmond, along

the line of the Richmond, Fredericksburg and Potomac Railway, and moved the army to the vicinity of Fredericksburg as a preliminary step. His plan was to seize that point, before it could be occupied in force, and, with it as a safe water base, to advance directly southward, as Grant did in 1864. The advance corps reached Falmouth, opposite Fredericksburg, on November 17, but the opportunity to cross and seize the heights was lost.

Enterprise was conspicuous by its absence, now and generally in this short campaign. Gradually the whole army came up and encamped behind the hills on the northern river bank. For three weeks it remained there, while every day the Confederate army increased in numbers and their defensive works grew stronger.

The army was the same that fought at Antietam, except that the Twelfth Corps had been exchanged for the Third; also there was an entirely new set of generals. The organization was somewhat different; the six corps were grouped in three "Grand Divisions" of two corps each, known as Right, Center and Left. The Right Grand Division, under Sumner, was composed of the Second and Ninth Corps. The Center Grand Division, under Hooker, was composed of the Third and Fifth Corps. The Left Grand Division, under Franklin, was composed of the First and Sixth Corps. These six corps were made up of eighteen divisions; the divisions as a rule had three brigades, averaging a little less than five regiments to a brigade. Each regiment contained rather less than four hundred men present for duty. The total number of infantry regiments was about 256; the regular regiments were so broken up that it is difficult to say how many regiments there were in the two regular brigades of Sykes' Division (Fifth Corps). These six infantry corps, with their artillery, totaled about ninety thousand men for battle. There was enough of cavalry, reserve artillery, engineers and special troops to make the grand total well above one hundred thousand men. The organization of the army was probably better than it had ever been before, but the discipline left much to be desired, as was shown by the lack of support on the part of generals, and the inexcusable looting of Fredericksburg by the enlisted men.

The army reached Falmouth November 17-20, and remained in camp until December 11. During this time the railway to the landing at Aquia Creek (a small branch of the Potomac) was reconstructed and a supply depot established at that point.

This gave a very good line of communication back to Washington. The distance by rail to Aquia is about eleven miles; from Aquia to Washington by boat, about sixty miles; the whole distance, about seventy-five miles, requiring seventeen hours' time, including transfer. Roads led from the Falmouth Station to the camps of the various corps. A considerable amount of supplies was accumulated. Transportation was scarcely a problem during this campaign. Tents, clothing, rations, ammunition and supplies of all kinds were so abundant as to allow no complaint.

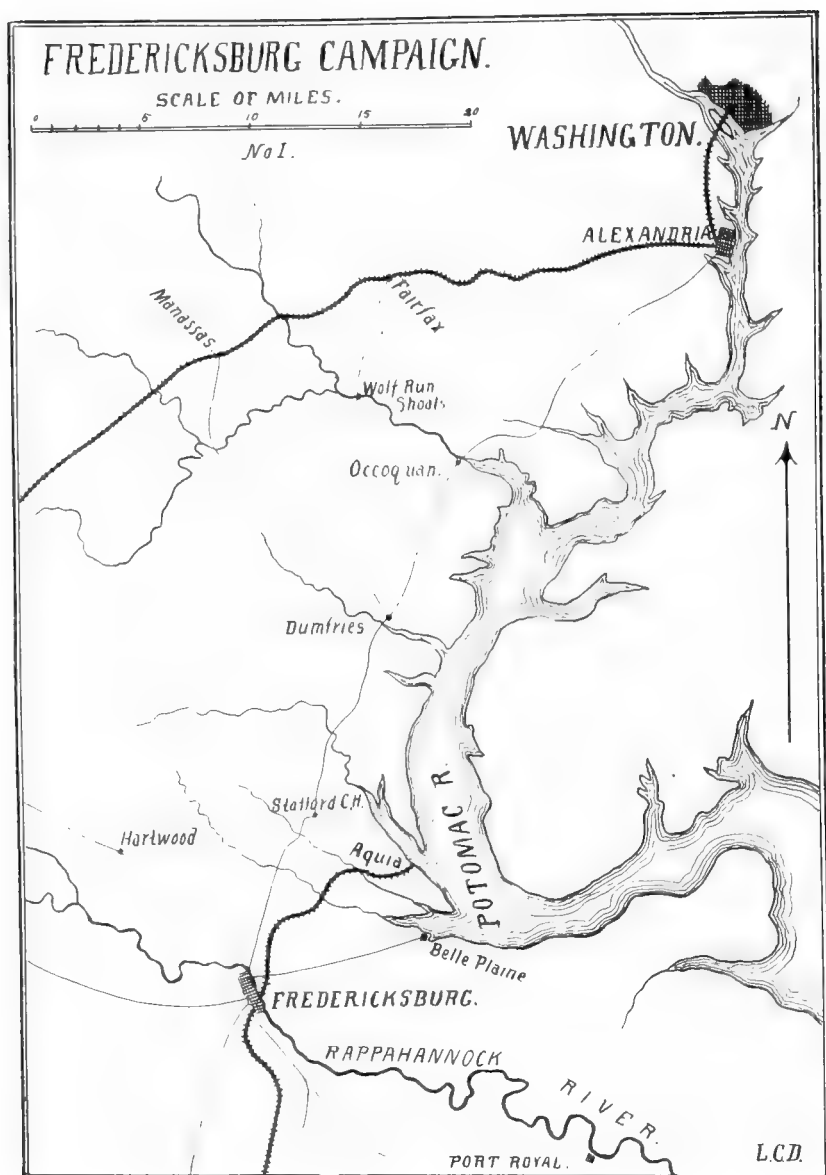
The weather during the early part of December was cold and stormy, causing much suffering in the camps, where shelter tents were the only protection from the elements. There was snow and ice in the river on December 7. The naval officers on the gunboats a few miles below feared that their vessels would be frozen in. The historian of the Seventh Rhode Island wrote in his diary:

"Dec. 6th. Just after ten o'clock it began to rain, but soon turned to snow, which continued to fall during the night, accompanied by high winds. Wet and cold from the storm, the men wrapped in their blankets, sat like Choctaws around the fires. Next morning the weather was intensely cold."

But the stormy period passed and the weather at the time of the battle was unusually fine for December. Some writers speak of overcoats being uncomfortable; others say that the morning of the battle was like a spring morning; others say that the night following was not cold, and Sunday was fine and balmy. While a few attempt to make out that the bodies of the dead froze stiff on Saturday night, the great majority of the evidence is to the contrary; especially that of the medical officers. The days were unusually fine and warm; the nights were, of course, cool, but not notably cold. There was no severe weather until the night of the seventeenth—four days after the battle. The New York Herald reporter wrote on the 15th: "Weather has been clear and warm, with southerly winds."

The campaign of Fredericksburg covered no extensive terrain, only the narrow valley of the Rappahannock, with a line of moderate hills or bluffs on either side. The river, some three hundred yards wide, and unfordable at the town, runs from northwest to southeast, with the town on the southern bank. The river hugs the northern line of hills, known as Stafford Heights. These heights begin at Falmouth, above the

4 MEDICAL DEPARTMENT IN THE CIVIL WAR.



town, and extend well below it. They are higher than the highest building in Fredericksburg. Above, opposite Falmouth, the valley is narrow; at the town it widens to three-fourths of a mile, and is three miles wide at Massaponax Creek, four miles below. The line of hills which closes the valley on the southwest has various names; Taylor's Hill above, near the river; Marye's Hill and Willis' Hill opposite the town; and other hills further to the southeast. The area of fighting was smaller than in any other great battle of the war. When the conflict had ended, the dead in front of Fredericksburg might have been enclosed by a square of half a mile. The battle on Franklin's front took place in another limited area near the lower crossing. The Confederate leaders made their line of defense, not the actual river, but the line of hills that closed the plain.

Fredericksburg was an old and solidly built town, with a population then, as now, of about five thousand. The buildings were chiefly of brick and afforded shelter from rifle fire. There were a court house, orphan asylum, seminary, five churches, and a number of large warehouses, that could be used for hospital purposes. Steamers could come up the river as far as the railway bridge—then destroyed. The wagon bridge had also been broken down, but the river could be forded at a dam above Falmouth. Most of the inhabitants deserted the town, but a few remained throughout the battles. Despite the tremendous bombardment on the eleventh and the street fighting on the twelfth, no one of them was killed.

On December 11 pontoon bridges were at last thrown across the river, under fire, and with some two hundred killed and wounded. Three bridges were laid at the town and two at what was known as Franklin's Crossing, three miles below. Howard's Division crossed and, after some fighting, drove the Confederate sharpshooters out of the town. Several brigades crossed at the lower crossing, but were withdrawn except a few regiments to hold the bridges. On December 12 the First and Sixth Corps crossed and took position in front of the lower bridges. The Second and Ninth Corps crossed at the upper bridges and took position in the town. The Center Grand Division remained in reserve on the northern bank, with the greater part of the artillery, which dominated the town and adjacent portion of the valley. All was now ready for the battle. The plan, if there was any plan, was for Franklin to

make the main attack, turning the Confederates' right and rolling up their line, when Sumner was to attack in front of the town. Hooker was to send reinforcements to either wing as needed.

From Stafford Heights for three weeks officers and soldiers had looked down on the field. There had been no lack of time for studying the ground, bringing up supplies, and making every possible provision that foresight might indicate. Unfortunately the same time had been given the enemy to prepare a naturally strong position, and a deadly reception awaited any attempt to storm the hills behind the town. The line of bluffs, from the river on the northwest around to Massaponax Creek on the southeast, was crowned with works, lined with troops, and sprinkled with guns. Against this bristling line the Army of the Potomac was to be thrown in a deadly frontal attack. It needed no Cassandra to foresee long trains of wounded dragging back to the river, and silent dead splotching the fireswept plain.

MEDICAL PREPAREDNESS.

At Fredericksburg, for the first time in a great battle, the wounded of the United States Army had adequate care and treatment. Manassas had been marked by indescribable privation and suffering among the wounded. After that battle the army was given an ambulance organization. In consequence the wounded at Antietam were collected systematically and promptly. No complaint was heard on that score; but there was no shelter except such as the country afforded. For several days the lack of supplies was lamentable, and would have been worse but for the assistance of the Sanitary Commission. Both these shortcomings were remedied while the army lay at Sharpsburg. Letterman's Supply Order, October 4, had greatly improved the supply situation, though still leaving some minor faults. His Field Hospital Order, October 30, had given each division of the army a real, if temporary, field hospital, provided with personnel, tentage and bedding, medical and surgical supplies, rations and cooking utensils.

There was ample time to supply the whole army with everything required, and some time for drill and practice. The Medical Purveyor of the army, Asst. Surg. T. J. McMillan, moved his depot from Knoxville (near Harper's Ferry) to Washington, and then to Aquia Creek, where he maintained a large store-

house, with a sub-depot at the railway station at Falmouth. The medical directors were informed of these stores, and it was only necessary for them to send in a simple memorandum in order to secure what they needed. The field of action could be studied and everything prepared before the army should cross the river for action. When it did cross, on Saturday, December 13, the Medical Department was prepared to collect the wounded, dress and feed them, and give them shelter in hospital tents until they could be removed to the rear. In no previous battle had it been possible to do these things, even approximately.

Letterman says of the preparation for the battle:

"After the arrival of the army before Fredericksburg, it became evident that we could not occupy the city, nor proceed farther without a great battle. It became necessary to see that everything in the medical department should be ready for any emergency which might arise. The principal objects to be accomplished were, that an extra amount of supplies for such an occasion should be on hand and easily attainable; that the organization of the ambulance corps should be carried into effect in those corps which did not belong to this army when the order was issued, and that it should be more perfectly put in force in the others than it had been hitherto.

"Ample supplies of stimulants, medicines and anesthetics were issued from New York and Washington. In addition to these supplies, large quantities over and above what was required for issue, of beef stock, stimulants, dressings, milk, coffee, tea, blankets and underclothes were ordered and kept on hand. All the Autenreith wagons that could be procured were distributed. I regretted that there were not enough to supply each brigade, but this I had no power to remedy.

"The required institution of field hospitals was to be attended to. The details were made in each corps, the necessary blanks distributed, and every step taken, as far as could be before an action, to carry the instructions contained therein into effect. The ambulance corps in each army corps was examined, and requisitions made for such numbers as were needed to make up the allowance. Horses, harness, stretchers, lanterns, and all that was necessary for putting the trains in serviceable order were procured, and officers were assigned and men detailed to complete and render effective the organization. Five hundred hospital tents were at my request ordered by Colonel Ingalls, the Chief Quartermaster of the army, and kept at the depot, ready at any moment for use when required. During this period frequent interviews took place with the medical directors and other

medical officers, and with the ambulance officers, and such advice and instructions were given as were deemed expedient."

The basis of tentage in the division hospitals was two hospital tents for each regiment. As these tents were capable of sheltering ten men each, and the regiments averaged no more than four hundred men, there was accommodation in the field hospitals for five per cent of the fighting strength of the army. There was also on hand a reserve of five hundred tents, providing for another five per cent. Taking into consideration the unusual number of slightly wounded, not requiring hospital care, the supply of tents was considerably in excess of what was actually needed. It was lavish, and greater than for any other battle, either before or after this time. There was also straw for most of the tents, but by some oversight or failure, no stoves were furnished this midwinter camp. The weather was fine during the battle, but rain and snow came later, and there was general suffering in the hospitals and camps. There was also some lack of proper hospital food, that is, of delicacies suitable for the sick and severely wounded.

As to ambulances, there were enough. When Burnside took command, on November 9, there were 907 ambulances. On January 1, 1863, the Chief Quartermaster reported 1,161, excluding those of the corps that joined after the battle. At the time of the battle there were about one thousand ambulances, allowing one to each hundred men. Since little more than half the army was seriously engaged, and an unusual proportion of the wounds was slight, there could have been no possible lack of ambulances.

The division hospitals were all north of the river, but arrangements were made to take a part of the personnel and equipment across the river, when the town should be gained; the tents, however, were to be left standing. This arrangement contemplated that the litterbearers should carry the wounded to dressing stations or hospitals under the southern banks of the river; the ambulances were to cross to these stations and carry them to the more permanent hospitals on the northern side of the stream.

Letterman made little provision for the line to the rear. He desired to retain all the seriously wounded in the hospitals near Falmouth, or back toward Belle Plaine, as had been done after Antietam, but this plan was vetoed by the General. A patched-up railway, with a few small locomotives and open cars, extended

to the Potomac at Aquia. There were no hospital trains on this line, which was only a military railway. On the river were many steamers ready to carry the wounded from Aquia to Washington. These steamers, with two exceptions, were ordinary river steamers, with no special accommodations for the sick, but were models of comfort as compared with jolting ambulances, and open cars on a poor railway.

The base hospitals at Washington had undergone a change since Second Bull Run. The hotels, halls, churches and public buildings that had been crowded with sick and wounded, almost from the beginning of the war, had been abandoned, or were being closed as rapidly as possible. These unsuitable make-shifts gave way to barrack hospitals, roomy one-story structures, of light construction, cheap, but capable of good ventilation and general sanitation. The beginning was in barracks that had been occupied by troops, on Meridian Hill and elsewhere in the suburbs of the city. Gradually these barrack hospitals were increased in capacity and new hospitals, like Carver, Harewood, Armory Square, and Lincoln, were constructed and extended until the hospitals of the city of Washington had a combined capacity of twenty thousand patients.

Walt Whitman, whose principal occupation at that time seems to have been visiting the hospitals in the role of a good Samaritan, has left in various letters his impressions of these institutions. About this time he wrote:

"The Government is gradually settling down to adopt the plan of placing the hospitals in clusters of one-story wooden buildings, with their accompanying tents and sheds for cooking and other purposes. Taking all things into consideration, no doubt these are best adapted to the purpose; better than using churches and large public buildings like the Patent Office. These sheds now adopted are long one-story edifices, sometimes ranged along in a row, with their heads to the street, and numbered either alphabetically A, B, C, D, and so on, or Wards 1, 2, 3, etc. The middle one will be marked with a flag staff, and is the office of the establishment, with rooms for ward surgeons, etc. One of these wards will contain sixty cots; sometimes on an emergency they move them close together, and crowd in more. Frequently there are tents, more comfortable than one might think, whatever they may be down in the army.

"Each ward has a ward master and generally a nurse for every ten or twelve patients. A ward surgeon has generally two wards—although this varies. Some of the wards have a woman nurse; the Armory Square wards have some very good ones.

There is a regular staff and a sub-staff of big and little officials. Military etiquette is observed and is getting to be very stiff."

Whitman, a free lance in everything, often railed at the forms and rules, but on the whole testifies to the good management of the hospitals and the faithful work of the surgeons on duty in them. His collection of letters, *The Wound Dresser*, gives some vivid pictures of those hospitals.

THE BATTLE.

The battle of Fredericksburg was fought on Saturday, December 13, 1862. It consisted of two separate engagements; one, the main battle, was waged in front of the town; another lesser conflict took place three miles down the river. They had no connection. Sumner's Right Grand Division had crossed the day before and on Saturday morning was massed in the streets of the town, awaiting the order to move to the attack of Marye's Heights. At the Lower Crossing, Franklin's Grand Division also waited, on the sheltered ground behind the Bernard houses. Hooker's Grand Division stood fast on the northern bank, ready to move to either wing when needed.

Although the army had delayed for weeks, it was not moved out promptly at daylight. The commander had no very definite plans, hesitated and delayed, as a man not quite sure of himself. All writers agree that the army lacked confidence. The soldiers were in doubt, and officers in a position to know what was to be attempted, were fearful as to the outcome. A hesitating leader was moving a doubtful army to an all but impossible task.

Finally, about noon, Franklin opened the battle. He had six fine veteran divisions; two more from the Third Corps waited across the bridge. Yet he sent but two to the attack. Meade with the Pennsylvania Reserves and Gibbon with Rickett's old division moved bravely out across the low ground, passed the railway and Bowling Green Road, and disappeared in the woods. A tremendous outburst of firing alone told of their battle. They broke the Confederate line, took prisoners, and might have achieved some real success if they had been supported at the critical time. But it was the old story. Forty thousand men lay idle; these eleven thousand were allowed to fight the battle alone. Not so with Jackson. He brought up his reserves, attacked Meade and Gibbon on all sides, and repulsed them with heavy loss. By 1 o'clock the battle was over.

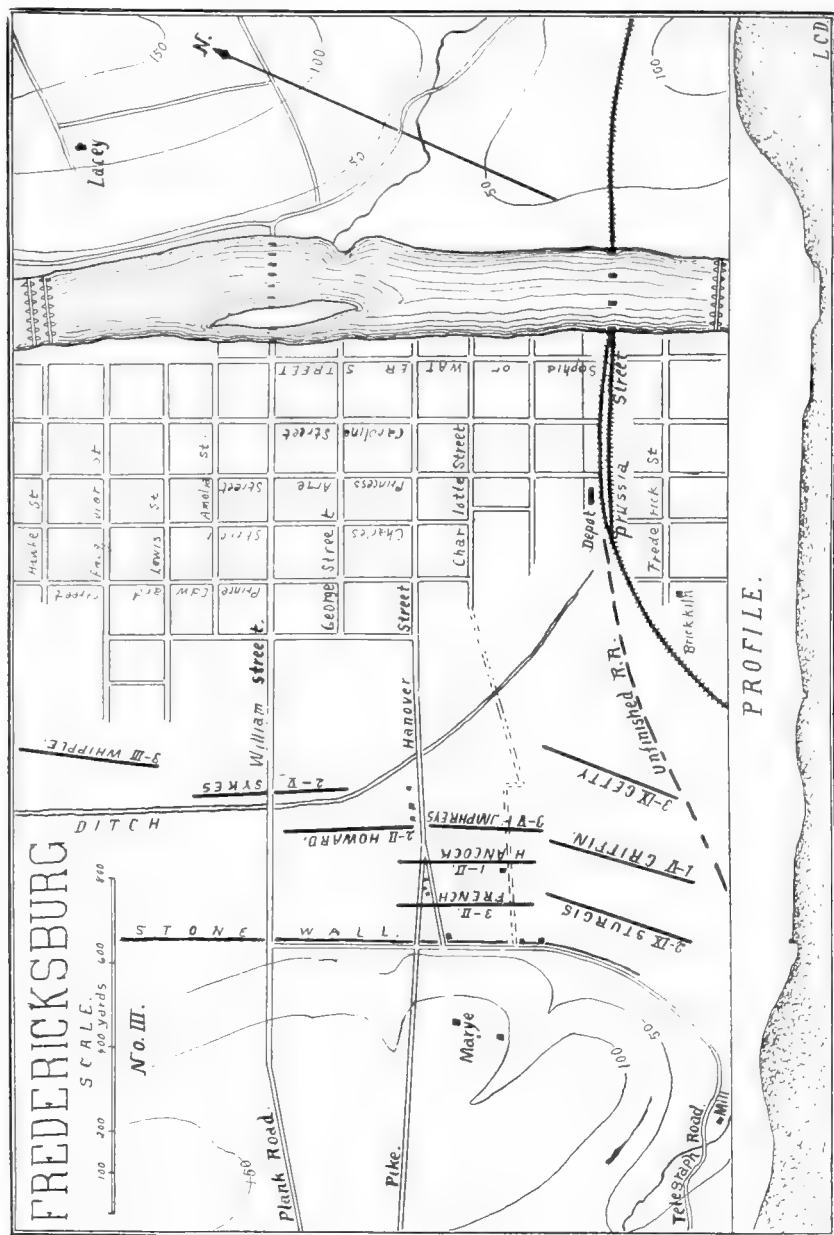
Sumner's battle was fought in a different manner. Troops enough were used to insure success, had success been possible. The battle here began as that on the left was closing. The Second Corps was to seize the heights. The columns moved out by Hanover street and the streets further south. Though exposed to artillery fire on emerging from the town, they found some shelter after crossing the canal, where lines could be formed for the attack. The hill was to be assaulted by column of brigades. French's Division moved first, with Kimball's brigade in advance, the other two brigades following at intervals of from one hundred and fifty to two hundred yards. On emerging from the swale these lines had to move less than five hundred yards to reach the stone wall and sunken road, but no man ever reached the wall. A cross-fire of guns rent and tore the lines, but they closed up and pressed on until they came within musket range, then they melted away. The remnants fell back to the ravine, where they lay down and waited for reinforcements. Kimball's brigade reached points within twenty-five or thirty yards of the wall; or rather some officers, color bearers, and other bold spirits advanced that far before they fell. Andrews followed Kimball, and Palmer followed Andrews, but none could pass that fatal zone of fire.

Next came Hancock's Division; the brigades of Zook, Meagher and Caldwell moved forward in order. Wave after wave of blue rolled forward across the narrow plain, only to break before the fire-fringed wall. Howard's Division was placed more to the right, but toward evening was also moved out on the Telegraph Road. Its loss was not so heavy. Meanwhile Sturgis' Division of the Ninth Corps had attacked further to the left, but with no more success. Later Getty's Division came up to his support and was partly engaged in front of the railway depot.

All these attacks having failed, the Fifth Corps was brought across the river and pushed in where the Second Corps had failed. Griffin advanced on the left and Humphreys on the right. Humphreys, riding at the head of his division, led as gallant and determined an attack as men could make. For years Humphreys' men disputed with those of Kimball and Hancock for the honor of leaving their dead closest to the wall. All alike failed.

*"The brave went down without disgrace,
They leaped to ruin's red embrace."*

It was Malvern Hill reversed.



After dark, Syke's Regular Division, which had been held behind the canal, moved out to the ravine to hold it for the expected renewed attack in the morning. All the other fragments of organizations, save Ames' brigade, were withdrawn into the town. Whipple's Division of the Third Corps had been posted somewhat to the right of the town to hold the line in that direction. Burns' Division of the Ninth Corps was across Hazel Run, maintaining a connection with Franklin's force down the river. When night came the town was filled with wounded, stragglers, men who had lost their regiments, and thousands of weary, discouraged men. There was doubtless much demoralization that night. The pontoon bridges were maintained next day and Sykes' men lay all day within a hundred yards of the wall, unable to go forward or back. Burnside intended to renew the attack, but fortunately his generals dissuaded him from further slaughter. That night the troops were all withdrawn into the town and, the following night, in a storm of wind and rain, the whole army was brought back across the river. The battle was over.

Twelve hundred dead lay unburied on the plain before Fredericksburg; nine thousand wounded suffered in the hospitals; two thousand were prisoners or missing, never to return; the army was disheartened and the people in gloom; such was the price paid by the nation for the selection of a man for the chief command because he was popular, though it must have been apparent that he had little or no real military ability.

COLLECTION OF THE WOUNDED.

On the right, ambulance trains were in readiness at the northern end of the bridges when the battle commenced, but could not yet cross. The stretcher-bearers, usually six to a regiment, had been sent forward and followed their regiments into battle. Men began to fall before the lines emerged from the town; once outside, the losses were so severe that the dead and wounded actually impeded the advance of fresh lines. Many were carried to the rear, but the number of litter-bearers was inadequate for such losses as these. Many regiments had more than a hundred wounded; some as many as 167 (11th N. H.) and 194 (7th N. Y.).

Those nearest the town crawled away or were helped to such safety as the place afforded. For those who fell far in advance, though they were but a few hundred yards away, there was no

help until night. Every slight ravine or house was filled with wounded. General Couch tells of trying to get behind the brick house (Embree) and finding its rear crowded with wounded men. Many were helped to the rear by their comrades. Officers were quite commonly carried to the rear by their men. The various regimental histories and personal narratives indicate that the greater part of the wounded was removed in this manner—as far as the ambulances. Litter-bearers are scarcely mentioned.

When night came the real collection of the wounded began. The ambulance trains moved across the river and went out onto the field, while detachments from each regiment searched the ground for their own comrades. Before morning practically all the wounded had been brought within the town, where the various corps had extemporized hospitals. Letterman says that but twenty were left behind—outside the picket lines. No Confederate report mentions any wounded taken on this part of the field. The Second Corps had 3,214 wounded, the Fifth 1,669, the Ninth 1,067; total, 5,950. Some few of these were wounded on other days. At least 5,500 were wounded on that Saturday afternoon in front of Marye's Heights.

Colonel Joshua L. Chamberlain, 20th Maine, spent the night at the very front of the battlefield, where he was a witness of the suffering endured by the wounded. By midnight he could endure it no longer. He says:

"I rose at midnight, and taking our Adjutant for companion, went forth to see what we could do for these forsaken sufferers. The deep moaning sound led us to our right and rear, where the fiercest of the fighting had held brave spirits too long. As we advanced over the stricken field the conglomerate monotone resolved itself into its several elements; some breathing inarticulate agony; some dear home names; some begging for a drop of water; some praying for strength to bear; some for life; some for quick death. We did what we could, but how little it was. Our best was but to search the canteens of the dead for a draft of water for the dying; to ease the posture of a broken limb; or to compress a severed artery with what little skill we had been taught by our surgeons, in learning the tactics of saving as well as destroying men.

"Wearied with the sense of our own insufficiency, it was a relief at last to see through the murk the dusky forms of ghostly ambulances gliding upon the far edge of the field, pausing here and there to gather up their precious freight; and the low-

hovering, half-covered lanterns, or blue gleam of a lighted match, held close over a brave, calm face, to know whether it were of the living or the dead."

Colonel Chamberlain's regiment was of Griffin's Division (First), Fifth Corps. A few extracts from the report of the ambulance corps of that division will serve as a sample of the work of all the ambulance corps:

"December 11. Inspection at sunrise; teams harnessed; left camp and followed ammunition trains toward front. At sunset unhitched, but left teams harnessed all night.

"December 12. Hitched up at sunrise; followed ammunition trains to front; unhitched at sunset.

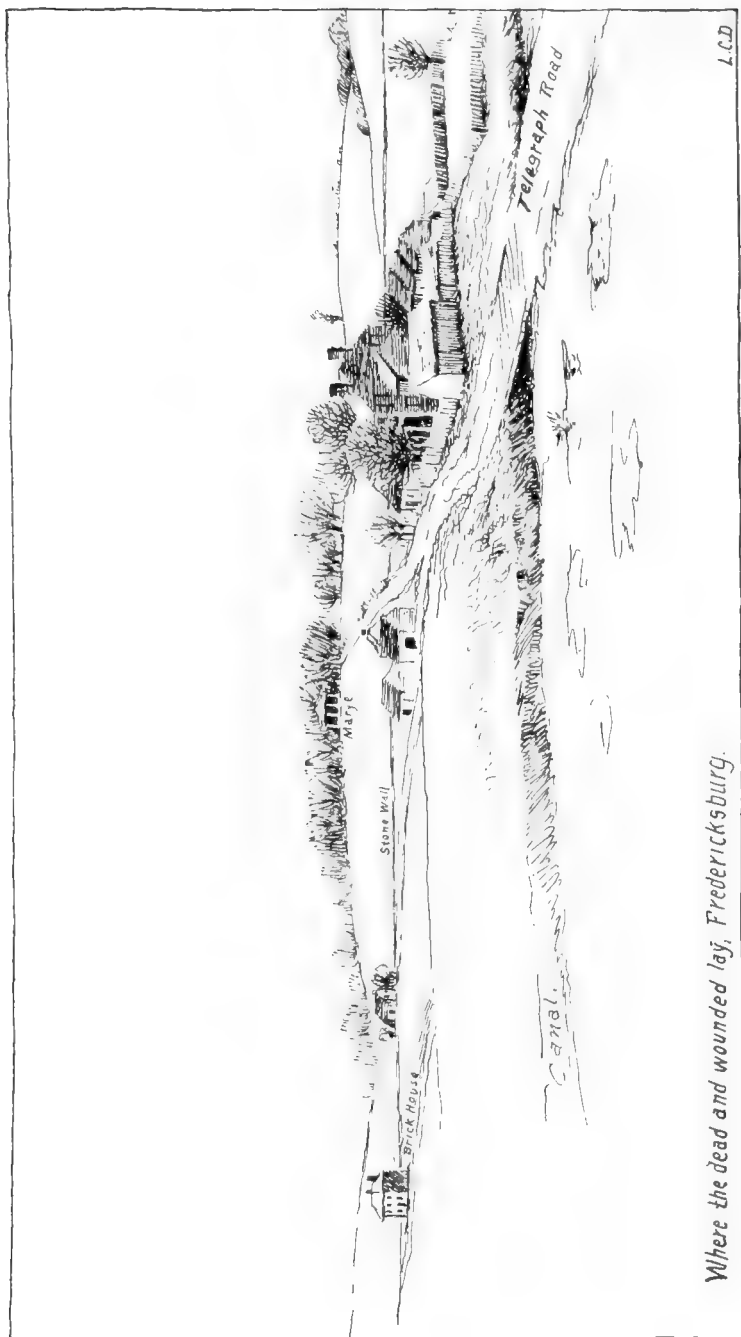
"December 13. Hitched up at sunrise; at 2 P. M. went to pontoon bridge; at 3:30 detached my stretcher men with 43 stretchers (18 regiments) and sent them across the river to the field. Detailed 12 ambulances to remain on the north side of the bridge and await the return of the stretcher men. The stretcher men were employed until 7 P. M. in bringing the wounded from the field into the city of Fredericksburg. At 7 the ambulances crossed the river, went onto the field, and were employed all night in bringing off wounded. I calculated that about 375 were removed from the field to the town that night. At 5:30 A. M. the train recrossed the river and unhitched. (This division had 665 wounded.)

"December 14. Remained quiet all day. Hitched up at sunrise and unhitched at sunset.

"December 15. Hitched up at sunrise. My train crossed the river at 10 A. M., loaded with all the wounded belonging to the division, and brought them back to this side.—Lt. Joseph C. Ayer, 18th Mass. Inf., Chief of Ambulance Corps, 1st Division, 5th Army Corps."

The work of the ambulance corps on the right was simple, since all the wounded lay within a small space, on an open plain. On the left, where Franklin's battle took place, the wounded were scattered in the woods, fully a mile from the river. The ambulances here came across the river, but most of the wounded were carried to the hospitals at the Bernard houses and Smithfield, all close to the Rappahannock. By the next morning all were in save some two hundred who lay close to or within the Confederate lines. These appear to have been uncared for until the next night. General Sickles, whose division occupied this front after the retirement of the First Corps, says of these wounded:

"Opportunely the stretcher men from my ambulance corps on going to the front for wounded skirmishers occasionally went



Where the dead and wounded lay, Fredericksburg.

to the verge of the enemy's line to get the wounded of Gibbon's Division who fell on Saturday. These men were told by the enemy that if our skirmishers would not fire any more on them, our ambulance parties might come anywhere along or within their lines and get all wounded, hundreds of whom were appealing for succor. This was soon after said to be confirmed by General Ewell, whose division was in my front, and I directed all firing along my lines to cease."

This late removal was not due to any fault of the ambulance corps, but to the position of the wounded within the enemy's lines. Very few wounded were made prisoners in this battle. I can find record of but 23 in the Confederate reports. It appears that they allowed the removal of some that might have been held, but they were mostly men who would never serve in the ranks again.

Among the fatalities on the 13th was that of Surgeon Samuel F. Havens of the 15th Massachusetts. On account of his fearless actions at Antietam this medical officer had been detailed to the Division Hospital. He begged so hard of the medical director to be relieved that finally his request was granted, and when his regiment came marching by in the street, he took his place in the moving column with unconcealed joy. Hardly were the lines formed outside the town when he was struck in the leg by a piece of shell, receiving a terrible wound. The limb was amputated, but he never recovered from the shock. The Massachusetts regiments were either unlucky in their losses or had exceptionally devoted medical officers. Assistant Surgeon Kendall of the 13th Massachusetts and Assistant Surgeon Revere of the 20th were both killed at Antietam. The Rev. Arthur B. Fuller, chaplain of the 16th, and a brother of Margaret Fuller, was also killed by a bullet in the streets of Fredericksburg on the 11th.

There have been many accounts of the suffering of the wounded from cold on the night following the battle. These accounts are greatly exaggerated. A surgeon of the Sixth Corps said: "A kind providence favored the wounded, for the weather was very moderate. Had such weather prevailed as was experienced before and afterwards, many of the wounded, weak and exhausted from shock and loss of blood, must have perished from cold during the night." We have mathematical proof that there was no noticable loss of life on this account, as well as that the temperature barely reached the freezing point.

Fredericksburg	killed 1,284	wounded 9,600	ratio 1:7.6
Antietam	killed 2,108	wounded 9,549	ratio 1:4.5
Atlanta	killed 1,600	wounded 5,915	ratio 1:3.6
Kenesaw Mountain	killed 1,790	wounded 5,740	ratio 1:3.2

The lowest temperature in Washington on the 13th was 32 degrees, on the 14th 38 degrees, and on the 15th 48 degrees Fahrenheit.

Extracts from report of ambulance corps, First Division, First Army Corps:

"In accordance with your directions I moved forwards on the morning of the 13th to a post near the river bank and went into park with the other division ambulance corps. Previous to this I had despatched my stretcher bearers to their respective regiments, each regimental squad being under charge of a sergeant, and the whole under command of Lieutenant W. H. Adriance.

"About noon I received your order for the transmission of twenty two-horse ambulances to the scene of action. I immediately despatched them under command of Lieutenant Henry Knight. For his prompt execution of the order he is deserving of much credit, being for some time under fire, and meeting with several narrow escapes. One of his ambulances was so injured by the explosion of a shell as to render it unfit for service.

"During the day the balance of my corps was ordered to the division hospital, where they were loaded with wounded and despatched to the general hospital. Sunday morning I returned to the division hospital with ten ambulances. At the same time Lieutenant Adriance was relieved by Lieutenant Kellogg, having become exhausted. During Sunday and Monday we were removing the wounded from division hospital to general hospital. At 4 P. M. I received the order to retreat and, loading the ambulances with the remaining wounded, conducted them safely to this side of the river. As near as I can ascertain, the number of wounded conveyed by my corps was 600, many of these from other divisions.—Lt. M. R. Baldwin, Chief of First Division Ambulance Corps, First Army Corps."

FIELD HOSPITALS.

The night following the battle was one of the most dramatic of the entire war. It appears today like some sombre scene of centuries ago, some half-observed vision of the wars of Gustavus and Wallenstein. A cloudy December night shrouded everything in gloom, from which crowded streets and ruined buildings emerged momentarily at the flash of a shell, to sink again into the gray of the night. Wounded, stragglers, men who had lost their organizations were everywhere. Regiments maintaining

their organization, but in no order, camped along the streets. The hospital lights and campfires, the smoldering fires and ravaged buildings with flapping blinds, the lawless men and demoralized stragglers, the suffering and death in the hospitals, all gave the sacked and gutted town a look of pandemonium, such as one imagines of Magdeburg or Saragossa.

The place was crowded with wounded men; the court house, churches, schools, stores, private houses; all were lighted up, and within, surgeons worked the night long. Blankets and curtains were fastened over the windows next the enemy to avoid attracting his fire. Behind these, by the dim light of candles and lanterns, the surgeons carried on their painful but necessary work. The ambulances went and came ceaselessly, bringing the wounded by tens and hundreds, faster than they could be cared for. The houses were filled, then the yards, and rows lay on the sidewalks. For some aid came too late or was useless, and soon there were growing rows of dead laid out for burial. These affected no one unless a relative or comrade chanced to be at hand. There was more than enough work with the living, enough to make the surgeons forget the terrible repulse and useless sacrifice of life. Some one has said: "The sadness which prevailed throughout the whole army that night can neither be described nor imagined. The surgeons were the happiest of all; they were so busy they had no time to think of our terrible defeat."

RIGHT GRAND DIVISION.

The final preparations for battle were made on the 12th. Letterman says of the preparation of field hospitals:

"In passing through the city on the afternoon of the 12th for the purpose of examining it in regard to its adaptability for hospital purposes, I found desolation everywhere visible, from the effects of the bombardment of the previous day. Some houses were shattered, others in ruins, others burned. The court house, several churches, and other buildings were selected by and under the immediate direction of the medical directors of the Right and Center Grand Divisions, and medical directors of the corps to be engaged. As many hospital wagons as were required were sent over and the organization of each hospital was commenced. So earnestly did the medical officers enter upon the discharge of their duties, that before the action began on December 13, the hospitals were in readiness. Mattresses and beds were procured from the dwellings. These, with a limited amount of straw, enabled the surgeons to have everything neces-

sary to put the hospitals in order for the proper and speedy treatment of the wounded.

"The wounded on the north side were left in charge of a sufficient number of medical officers and attendants, with plenty of medical and surgical appliances and food. All the tents were left standing, and others on hand, ready for use, should they be wanted."

The Second Corps began the conflict on the right, where the gray plain before the town became almost blue before the sun of that brief December day had set. As at Antietam, this corps had the heaviest losses. The three division hospitals of the corps were grouped together near the railway station and west of the Phillips House. Each of the hospitals had from 14 to 17 medical officers with a plentiful amount of tents and supplies. Howard's Second Division crossed into the town on the 11th, with considerable fighting at the crossing and in the streets. While leaving the tents standing where they were, the medical director established another hospital at the Lacy House (Chatham), which is near the site of the upper bridges. The main hospital received 500 wounded, the Lacy House hospital 280; total, 784. The division had 718 wounded.

Early on the morning of the 12th, Hancock's (1st) Division and French's (3rd) Division crossed the bridges and remained in the town until the next day. Both divisions left their hospital tents standing and sent forward surgeons with supplies, to prepare temporary hospitals in the town. These extemporized establishments might be called dressing stations, but all kinds of operations were done in them during the three days that they existed. The First Division suffered more severely than any other in the whole army, having 1,584 wounded out of 5,006 engaged. The seventeen small regiments had nearly 100 wounded each.

French's Division hospital cared for about 600. The division had 904 wounded. The medical officers of this hospital appropriated supplies of all kinds in the town. One surgeon relates that a large quantity of ribbons was found, and as bandages grew scarce these ribbons were used instead. All these hospitals were brought back across the river on the 15th, and the wounded were placed in the tents.

The Ninth Corps formed one-half of the Right Grand Division, but for some reason, or by some chance, was only in part engaged, supporting the left of the Fifth Corps. Sturgis' Division (2nd) advanced near the railway depot, and, when the

Second Corps began to break, was pushed forward, against the right of the stone wall. This attack failed like all the others, resulting in 827 wounded. About four o'clock Getty's Division (3rd) came up to the support of Sturgis. Getty's troops were not all engaged and the wounded only numbered 216. The First Division, under Burns, was sent across Hazel Run to hold the center of the long battle line; it was scarcely engaged, having but twenty-four wounded. The whole Ninth Corps had 111 killed and 1,067 wounded.

All the hospitals of the Ninth Corps were located on low ground north of the Phillips House. They were established there on December 9, to care for the wounded from the expected conflict at the river crossing. They remained in the same place throughout the battles, but temporary hospitals were doubtless prepared in the town as with the other corps. The three hospitals are said to have cared for about 1,300 wounded, some of whom must have belonged to other organizations. It was necessary for all these divisions to have hospitals in the town, since the bridges were so crowded that they could not be used by ambulances on the day of battle.

When it was seen that the Right Grand Division could not alone carry the heights, the Fifth Corps, from the Center, was sent across to make the attempt. About two o'clock this corps crossed the bridges and formed for the attack. At three, Griffin's Division (1st) moved out on the left and Humphreys' (3rd) on the right. Sykes, with the regular division, was held in the edge of the town, in reserve. Griffin and Humphreys made the attack, "With a spirit and efficiency scarcely ever, if ever, equaled in the records of the war." But they, too, recoiled before the blasting fire from the sunken road. Late in the night Sykes' Division was advanced to within a short distance of the wall, relieving other troops still holding their positions at the front. This position was held until the following night; it could not be left until dark. The corps lost in killed 206, in wounded 1,669.

The hospitals of the Fifth Corps had been established very close to the Falmouth railway station. Hospitals for the two divisions chiefly engaged were established in the town on the 13th. The First Division had 733 wounded, the Third, 772. Sykes' Division did not go to the front until the battle was over. It was under a scattering fire next day and before being withdrawn had 17 killed and 163 wounded.

Whipple's Division of the Third Corps was posted on the right of the town, but remained on the defensive, having but 92 wounded. The hospital was near the Phillips House and was not brought across the river.

Walt Whitman made a journey to the army at Falmouth in December, visiting his brother, George W. Whitman, then a Captain of the 51st New York. While there he wrote a letter to the New York Times, from which the following extracts have been made:

"Began my visit (December 21) among the camp hospitals in the Army of the Potomac under Burnside. Spent a good part of the day in a large, brick mansion on the banks of the Rappahannock immediately opposite Fredericksburg. (The Lacy House, branch of hospital, Second Division, Second Corps.) It is used as a hospital since the battle and seems to have received only the worst cases. Out-doors, at the foot of a tree, within ten yards of the front of the house, I noticed a heap of amputated feet, legs, arms, hands—about a load for a one-horse cart. Several dead bodies lay near, each covered with its brown woolen blanket. In the dooryard, toward the river, are fresh graves, mostly of officers, their names on pieces of barrel staves or broken boards, stuck in the dirt.

"The house is quite crowded, everything impromptu, no system; all bad enough, but I have no doubt the best that can be done; all the wounded pretty bad, some frightful, the men in their old clothes, unclean and bloody. (The Government at that time supplied very little hospital clothing.) I went through the rooms downstairs and up. Some of the men were dying. I had nothing to give them at that visit, but wrote a few letters to folks at home, mothers, etc.

"December 22-31. Am visiting the regimental, brigade and division hospitals somewhat. Few at home realize that they are merely tents, and sometimes very poor ones; the wounded lying on the ground, lucky if their blanket is spread on pine twigs or some leaves. No cots, seldom even a mattress on the ground. It is pretty cold. As to rations the army here at present seems to be tolerably well supplied. Most of the regiments lodge in the flimsy little shelter tents. A few have built huts of logs and mud.

"Left Falmouth January, 1863, by Aquia Creek railroad and so on Government steamer up the Potomac. Many wounded were with us on cars and boats. The cars were just common platform ones; the railroad journey of ten or twelve miles was made mostly before sunrise.

"Now that I have lived for eight or nine days amid such scenes

as the camps furnish, and realize that hundreds of thousands of good men are now living, and have lived for a year or more, not only without any of the comforts, but with death and sickness, and hard marching and hard fighting (and no success at that), for their continual experience—really nothing we call trouble seems worth talking about.”

LEFT GRAND DIVISION.

The Left Grand Division crossed at the lower bridges on December 12. Early in the morning the Sixth Corps crossed and took position in front of the bridges. The First Corps followed, moving to the front and left, that is, further down the river. Bayard's cavalry brigade accompanied this division. Roughly speaking, the Sixth Corps occupied the right of the line, extending to Deep Run; the First Corps occupied the left, extending nearly to Massaponax Creek. The troops were on the lowest plain of a gentle terrace rising from the river, from which they were to advance to the wooded hills where the Confederates were posted.

One hospital of each of these corps was pitched on the north side of the river, to care for those wounded in crossing, and as a sort of general hospital for the corps. That of the Second Division, First Corps, was at the Pollock House, in a ravine behind and below the pontoon bridges. The hospital of the First Division, Sixth Corps, was in the same ravine, above the bridges. The remaining two hospitals of each corps were taken across the river on the 12th. One report says that the constant use of the bridges by troops and wagons during the battle precluded their use for removing the wounded.

The hospital of the First Division, First Corps (Doubleday's), was established at the Forbes House on Pratt's farm, also known as Smithfield. This point was directly in rear of the division and about two miles from the enemy's lines. The division was not actively engaged, having but 161 wounded during the battle.

The hospital of the Second Division was at the house of Pollock, as stated above. An ambulance station was located near the southern end of the bridge, to which the wounded were directed to be conveyed by the stretcher-bearers, and thence across the river and to the hospital by ambulances. This division, Gibbon's, had 924 wounded.

The hospital of the Second Division (Gibbon's) was in charge of Surgeon Charles J. Nordquist, 13th Massachusetts. It received 819 patients, of whom 43 died, three while in ambulances.

Among this number there were 67 amputations, with but two deaths before the wounded were removed to Washington. There were 10 amputations of the thigh, 16 of the leg, 15 of the arm, five of the fore arm, and 21 of the feet, fingers and toes.

The hospital of the Third Division, Meade's Pennsylvania Reserves, was temporarily pitched in a ravine above and to the rear of Smithfield. It was the intention, if the attack proved successful, to move this hospital further to the front. The division had heavy losses, the wounded numbering 1,241.

These hospitals were ready before the battle opened. At the first artillery fire, cooking commenced, and the wounded, as quickly as brought in, were, if necessary, supplied with hot soup and coffee. Wood and water were abundant. As many tents were set up as were necessary. For several hours the wounds were occasioned almost entirely by shell fire. Shortly after noon, when the two divisions advanced into the woods, wounds from rifle balls became more prevalent. When this attack was concluded artillery fire was kept up until dark, the position of the troops remaining about the same as in the morning. As it was thought that the battle would be renewed next day and the position of the hospitals was subject to shell fire, they were removed during the night to the north side of the river. The hospital of the First Division was now established near that of the Second Division; that of the Third Division near the house of Doctor Monson. The tentage of the Second and Third Divisions was not quite sufficient and twenty extra tents were drawn from the purveyor. Medical Director J. T. Heard reported that 1,500 wounded were cared for in the three division hospitals and safely removed to the north side of the river before morning. This officer, who had been in all the great battles of the East, says of the medical work of the army in this battle:

"In no previous battle witnessed by me were the wounded so promptly and well cared for throughout the army as at Fredericksburg. This was due to the uniformity of action. Every surgeon, hospital steward, nurse, cook and attendant was assigned to his position and knew it."

The Sixth Corps was considered a guard for the pontoon bridges and remained in their immediate vicinity, taking little part in the battle. General Franklin evidently did not believe that the bridges could be best defended by a strong attack on the enemy; at any rate more than twenty thousand men were

held out of the fight for that purpose. This fine, large corps had but 329 wounded in the whole battle.

The hospital of the First Division was held on the northern side of the river, as already related. The other two were taken across and established at the two Bernard houses, near the river. The hospital of the Second Division was at the lower Bernard house, also known as Mansfield, which was the headquarters of General Franklin. General Bayard, of the cavalry, was killed by a shell in the yard, showing that it was not safe from artillery fire. Numerous writers have related how the owner of this fine old place attempted to prevent the army from intruding on his privacy, and how the discussion was ended by his being marched across the river under guard. His attempt to prevent trespass by the army was prophetic, for the mansion was afterwards burned. This division had 159 wounded.

The hospital of the Third Division was at the upper Bernard house, above the pontoon bridges. This division had but 47 wounded.

Medical Director Charles O'Leary of the Sixth Corps reported that each hospital in his corps had three operating tables, with the required number of operating surgeons and assistants. Instruments, dressings and all necessary appliances were arranged with an order, precision and convenience rarely excelled in permanent hospitals. The testimony of line officers as well as medical officers was that the preparation quickly made presented the completeness in detail belonging to long established rather than extemporized field hospitals. The wounded were brought without delay to the hospitals of their respective divisions. The celerity with which wounded men were treated and the system pervading the whole medical department, afforded the most pleasing contrast to what had hitherto been seen during the war. Perhaps the most remarkable performance of the medical department in this part of the field was the removal of the hospitals with all their patients to the northern side of the river on the night following the battle. After the work of the day, this was a notable performance.

Surgeon George T. Stevens, of the 77th New York, gives a more realistic picture of one of these hospitals than any formal description can do.

"A fine stone mansion (Mansfield), of large dimensions, situated on the south bank of the river, and a little below the bridge, was taken by the surgeons of our division (2d Division,

6th Corps) for a hospital. The position was exposed to rebel fire, but it was the best that could be found. Just in front of it General Bayard was struck by a shell and killed almost instantly. Others, some of whom had been previously wounded, received fatal shots at the very door of the building. The day was bright and warm, as on a spring morning. The wounded poured into our hospitals and well did those surgeons, who had seized the stone mansion, earn that day lasting gratitude from their division. Never had wounded men been so quickly or so well cared for. It was the beginning of an era of organized



HOUSE BY THE STONE-WALL, IN WHICH GENERAL COBB DIED. FROM A WAR-TIME PHOTOGRAPH.

labor in the medical department. The wounded were stowed in every part of the great house, and in the smaller buildings surrounding it; tents furnished shelter for those unable to find room in the buildings."

Two divisions of the Third Corps, the First Division (Birney's) and the Second Division (Sickles') also took some part in the battle on the left. At daylight on the 13th they were at the lower ford, waiting to cross in support of Franklin. Birney's Division crossed about noon; Sickles' a little later. Both were advanced toward the railway to hold the line formerly held by

the First Corps. Their lines were attacked and they suffered considerable loss. Birney's Division had 650 wounded, Sickles' 85. As the movements of these divisions could not be predicted in advance their field hospitals were left in the rear. The hospital of the First Division was at the White House, on the road to Belle Plaine. It received about 1,000 wounded. The Second Division hospital was at the Fitzhugh house, and cared for about 300. These hospitals appear to have received some of the wounded of Gibbon's and Meade's divisions.

The following extract from a Civil War letter may appear too trivial for reproduction, but it is first hand evidence. C. W. Bardeen was at that time a fifteen-year old boy, a fifer in the First Massachusetts. The drummers and fifers were ordered to the hospital after the battle. In a letter written a few days later he gives his experience:

"Monday morning we were ordered back across the river to the division hospital. So the drummers were put in reliefs of six hours each to attend to the wounded. My relief is on at dark. The following were the instructions given to me by the nurse in the tent assigned to me: 'The men on the left side will not require much attention. That man in the corner is wounded through the temple and is insane. You will have to hold him down if he attempts to get up, and you must keep close to him and keep him covered. The one next to him is crazy also. Every time he wakes up you must give him some water and look out that he does not get up. The one in the corner has got dysentery and will require the bedpan often. You must pay strict attention to them all, and not let the crazy men get the upper hand of you.' So off he went and left me alone with two crazy men and six or eight wounded ones to attend to. It was a hard place, but I did my duty."

We today cannot realize the difficulties under which the surgeons of these days labored. Very many of the instruments and appliances of surgery have been devised since that time. For example, although hemorrhage, primary and secondary, was one of the most common emergencies to be coped with, there were no elegant hemostatic forceps, such as we use now. A bleeding vessel must be picked up with an aneurysm needle or tenaculum. The difficulty of that procedure may be conceived, but that difficulty was still farther enhanced by the lack of retractors. Hypodermic syringes were unknown, such drugs as morphine being doled out on the point of a knife. Clinical thermometers were also yet to be. The beautiful dressings of modern surgery

did not then exist. Stumps of amputated limbs were dressed with a cross of lint, spread with simple cerate. From five to thirty silk ligatures were left hanging from each angle of the wound. When these came away hemorrhage very commonly occurred. In spite of all preparation, operative procedure could not but have been still more difficult in the field, and particularly at night.

BURIAL OF THE DEAD.

The dead numbered 1,284, possibly a very few more. A considerable number of these were killed in laying the bridges, in the street fighting, and on the 14th. The deaths on the 13th probably numbered 1,100, of which approximately 400 occurred in Franklin's battle on the left, and 700 in front of Marye's Heights. The greater part of those killed in the main battle, and part of those on Franklin's front were left unburied when the army recrossed the river on Monday night. On the next day General Hooker proposed to send out a flag of truce for the purpose of burying the dead, but it was disapproved by Burnside. On the 16th, however, the flag was sent out and on the 17th Colonel John R. Brooke of the 53rd Pennsylvania, Hancock's Division, crossed the river with a large burial party, made up of details from all the regiments engaged. Two days were spent in collecting and burying the dead. The weather being cool, the task was not so repulsive as at Antietam and Gettysburg.

In his official report Colonel Brooke said:

"Those bodies nearest the works were recognized as belonging to Kimball's brigade (French's Division) and to the regiments of Hancock's Division. The bodies of 913 soldiers were buried and five officers brought back across the river. Nearly all the dead were stripped entirely naked."

Mrs. Nannie Stevens, who lived in a house near the stone wall, related that on the morning after the battle the field was blue, but on the morning after the Federals withdrew the field was white.

Roy W. Mason, a major in the Confederate service, observed the work of this burial party. He says:

"I witnessed with pain the burial of many thousands (900) Federal dead. The night before the temperature must have fallen to zero (26° F.) and the bodies of the slain had frozen to the ground. The ground was frozen nearly a foot deep and it was necessary to use pick-axes. It was a sad sight to see these

brave soldiers thrown into the trenches, without even a blanket or a word of prayer, and the heavy clods thrown upon them. But the most sickening sight of all was when they threw the dead, some four or five hundred (?) into Wallace's ice house, where they were found, a hecatomb of skeletons, after the war."

This account is so evidently exaggerated that one is inclined to discredit the whole. Every statement that can be checked up is entirely unreliable, and as comrades of all these dead men buried them, it is unreasonable to think that they were buried in quite so unfeeling a manner. Stories of frozen bodies or frozen ground are fiction. The bodies were all disinterested and given decent burial in 1865.

EVACUATION OF THE WOUNDED.

On December 16 the wounded were all sheltered under canvas on the northern bank of the Rappahannock. Medical Director Letterman desired to retain all the more severely wounded, and treat them on the field, as he had done so successfully after Antietam, but General Burnside directed the removal of all to Washington. Chief Quartermaster Ingalls had already, on the 14th, telegraphed the Quartermaster General to have boats ready in the river for 3,500 wounded. General Burnside, desirous of repairing his badly-injured military reputation, was resolved on crossing the river at another point and again trying the fortune of battle. As a preliminary the hospitals must be cleared.

The regular evacuation began on December 16, four days after the battle. As the hospitals were only brought back across the river on the 15th, no time was lost. The division hospitals were very close to the Falmouth railway station, excepting those of Franklin's Grand Division, which were from two to three miles distant. Open cars were used, generally bedded with hay or pine boughs. These boughs of pine and cedar were as a rule preferred to hay or straw for bedding. They had one sovereign virtue—they did not become infested with vermin. Some mattresses were used for the compound fractures and other grave wounds. The cars were small platform cars of the military railway. They brought out ammunition and carried back the wounded. There were no hospital cars on this road. Delays at Aquia Landing were inevitable and the whole journey to Washington required sixteen to eighteen hours.

Although the regular evacuation began on the 16th, the first boats reaching Washington on the 17th; both officers and men



LACY HOUSE, HOSPITAL
2nd Divis. 07, 2nd Corps.

reached that city three days earlier. The *Washington Star* of December 15 said:

"Last night about nine, the Steamer *George Weems* arrived at the Sixth Street Wharf, bringing 350 to 500 officers and soldiers who were wounded in the battle of Fredericksburg. Ambulances were in attendance and the sufferers were conveyed to the various hospitals. These men are not dangerously wounded, but are principally such as were able to walk, and thus managed to be first to get to the boat."

On the 16th the Steamer *Wilson Small* brought an additional number of officers and men. The wounded brought on these boats seem to have come largely on their own authority. Letterman says:

"While the battle was in progress, and after it was over, nearly one thousand men, no one of whom was seriously injured, and some of whom were not injured at all, jumped on the cars at the station, climbed on top of them, and went to Aquia, where no provision had been made for the care of the wounded. Such men are those who in all battles run to the rear and raise the cry of want of attention on the part of the surgeons, whom they sedulously avoid, lest it be found that their wounds do not prevent their returning to duty. It is almost invariably found that those men who bear the burden and heat of the day, those who, when slightly wounded, are eager to have their wounds dressed, that they may return to the battle again; those too whose wounds are grave, do not complain of any want of care. But those cowardly stragglers, who upon the slightest bruise run away out of the observation of the surgeons, raise the cry, which many are prone to echo."

In spite of the guards at Falmouth and Aquia a number of this species of skulkers succeeded in reaching Washington. *The Chronicle* of December 17 said:

"Several hundred soldiers have come up on the boats, some of whom are sick and wounded. But the most of them are neither sick nor wounded, as we are creditably informed. The surgeons of the hospitals have been unable to find the wounds of which they complain. The medical director of the Army of the Potomac has not sent away any wounded, except a small number of wounded officers."

The latter statement is correct. Evacuation began on the 16th, the first steamers with these wounded reaching Washington on the 17th. The slightly wounded were sent away first. Surgeons and attendants accompanied them with the necessary supplies.

In the removal of the more serious cases, such as amputations,

fractures of the thigh, and penetrating wounds of the head, chest and abdomen, plenty of hay was placed in the cars. Mattresses and bedsacks were used for these cases and the patients were not removed from their beds until they had reached the Washington hospitals, but were carried upon them, placed on stretchers, and put upon the cars; whence they were removed in the same way to the steamers, remaining undisturbed in their beds until they had reached Washington. In each car there was a surgeon or an attendant, provided with everything necessary in case any accident should occur. Assistant Surgeon DeWitt C. Peters conveyed about 1,500 wounded from Fredericksburg to Washington. He says:

"The transportation was ample, but many of the cars consisted of simple platforms without covering, and were ill-adapted for transporting men badly wounded, especially in winter; and for this reason some of these unfortunates suffered severely. Many of them had but their blankets, but at the depot I found a supply belonging to the Sanitary Commission, and these I appropriated. There was no straw in the cars and none at hand that I could take for the purpose. At Aquia Creek we were transferred to steamboats. Here again there was ample room for the men, but nothing was provided for them to rest on save the hard boards of the deck. We were well supplied with rations, nurses, and attendants. No case terminated fatally en route; the work of the surgeons in the field had been so faithfully performed that my services were not required even to arrest the slightest hemorrhage."

On December 17 a number of steamers reached Washington with the advance guard of the regularly evacuated wounded, some 2,800 in number. The majority of these were able to walk to the hospitals, but nearly all had bandages on their heads or arms. On the 18th other boats brought 900 and a boat arrived at Alexandria with others. On the 21st two steamers brought 400 very severely wounded. Other steamers arrived daily until the 27th, when three steamers brought the last cargoes, 600 of the very worst cases. Ten days had been occupied with the evacuation. As a number of those brought up were sick, no accurate enumeration of the wounded evacuated can be made. The number appears to have been about 6,000, not counting those, possibly 1,000, who came unauthorized.

As there was a larger proportion of very slightly wounded than usual, it was not necessary to send so many to the base hospitals. There was no overcrowding of the Washington hos-

pitals, which had at last reached a capacity sufficient for the wounded of any ordinary battle. Some wounded were sent farther north, but chiefly because the states were clamoring for them. On December 20, an order issued by the War Department, provided that all wounded officers and soldiers who so desired should be sent to general hospitals in their own states. Here was a point where feelings of sympathy and humanity clashed with necessarily unfeeling measures; and, as is often the case, feelings got the better of reason and judgment. Yet had this order specified the very seriously wounded, those who would probably never return to duty, it would have satisfied both sentiment and judgment.

On the whole the evacuation was as well managed as could be expected without organization of the line of communications. The railway trains were bad, but regular hospital trains on this temporary line were out of the question. It seems that more than two hospital steamers might have been in readiness at this stage of the war. The lack of an evacuation hospital at Aquia was in a measure filled by the Sanitary Commission with a relief station, kitchen, and attendants. The greatest suffering was caused by cold, and although it must have been anticipated, sufficient preparation was not made. The Sanitary Commission furnished 2,700 blankets and quilts and 4,000 suits of underclothes. Stoves of a poor pattern were procured after a week's delay.

VOLUNTARY AID SOCIETIES.

The Sanitary Commission received news of the battle as darkness was ending the struggle. Next day a steamer loaded with supplies, four surgeons and a number of assistants started for Aquia. Previous to the battle two surgeons and several assistants accompanied the army, with a supply steamer on the Potomac. These gentlemen had distributed several wagon loads of supplies on the 11th and 12th. The boat from Washington reached Aquia on Monday morning and the party went forward to Fredericksburg, taking two wagon loads of supplies with them. The roads were so horrible, and so cumbered with trains, that the party did not reach the hospitals until the next morning—December 16.

They found the wounded in tents and generally comfortable, except as to the cold weather. The party was divided and all the hospitals visited. A store house was established and supplies freely issued to all medical officers needing them. While the

demand here was not nearly so great as at Antietam and other previous battles, yet the food delicacies provided were of much use, and some shortages of necessities were discovered. The most useful article supplied at this time was the ordinary blanket. Freezing weather on the 17th made the lack of blankets, always felt after a battle, even more marked on this occasion. For some reason no stoves had been provided for the hospital tents, and the patients lay shivering and actually suffering from cold. Hay, blankets and woolen underclothes had to repair this fault. Fortunately the Commission had a good supply of blankets and underclothing. These things were not only useful in the tents, but also during the cold journey up the river to Washington.

The medical department was not able then, or later, to supply a sufficient quantity of clothing for the field hospitals. Throughout the war the Sanitary Commission furnished a very large proportion of this clothing, and also that for many depot and permanent hospitals. It was not found necessary after this battle to supply medicines, liquors, surgical supplies, or any great amount of food; this for the first time after any great battle. These things are mentioned to show how far the medical department had progressed in methodically furnishing supplies.

Assistance was rendered in placing the wounded on the cars at Falmouth station, and in transferring them to the steamers at Aquia. At the latter place a relief station was established with shelter and a kitchen. Hot meals were served to as many as 600 at one time. Another party met the boats at Washington with food and hot drinks. A relief station had been established at the Sixth street wharf early in the war. Doctor J. H. Douglas, Associate Secretary of the Commission, says in his report: "Stimulants, I am happy to say, were in great abundance among the medical purveyor's stores, so that the calls on us were few. The same was generally true of food, and positively so of all kinds of medical articles, which had been furnished by us at other battles. Nothing of this kind was asked for. The wounded had all been placed in tents, and, under the circumstances, were well cared for. Owing to the cold weather an unusual amount of bedding and woolen clothing was necessary, and this only did the Sanitary Commission supply."

SUBSEQUENT EVENTS.

After the battle the army went into camp back toward Aquia and Belle Plaine. The weather grew rainy and cold, the flat camp

ground became a muddy morass, the men were despondent, and sickness increased rapidly. Desertions also were of alarming frequency. All accounts picture the condition of the army at this time as most miserable. Letterman does not appear to quite such advantage as a sanitarian as he does as an organizer and manager in the field. It was not the age of successful sanitation. Medical Inspector General Thomas F. Perley was sent to report on the situation. He said:

"I do not believe that I have ever seen greater misery from sickness than now exists in the Army of the Potomac." He went on to condemn almost everything connected with the medical department, and ended with condemnation of the medical director: "In view of the condition of the army I am forced to the conclusion that the principal medical officer is not equal to his responsible station, and has failed in his duty, either from having too much to do, or from neglect." In order to read this report rightly it is necessary to understand the bitter feud then waging between the Secretary of War and the Surgeon General—a feud to which Perley and Letterman were parties. Perley had been a seeker after Letterman's place and was engaged in an effort to discredit both the Surgeon General and Letterman. In the end Surgeon General Hammond and Inspector Perley were both forced out, but Letterman came through the contest unspotted.

On January 20 General Burnside began his last effort to retrieve his lost military reputation, and there ensued the four days' campaign known to history as the "Mud March." The army was to cross above Fredericksburg, and make another attempt at Lee's army. Scarcely had the long lines of infantry, cavalry and artillery started upon their rapid night march when a terrific storm of rain and sleet arose, breaking up the roads and making the advance impossible. Chilled and exhausted, floundering through mud and water in the bitter cold of a winter night, the soldiers struggled back to their cheerless camp. But hundreds who had escaped unharmed from a score of battles now fell, the victims of this miserable "Mud March." A field hospital was established at Windmill Point, a few miles below Aquia Landing, a city of tents arose in an old cultivated field. The rain fell incessantly and the whole camp presented a most wretched aspect. Thousands of weak and sick men lay in the fireless tents, on the muddy ground or on beds made of poles. Many died daily and it is probable that the "Mud March"

cost as many lives as the terrible battle that had shocked the entire North. On January 25 General Burnside was removed and Major General Joseph E. Hooker became commander of the Army of the Potomac. There was also a general change of corps commanders, but none of these changes affected the position of the medical director.

Burnside's campaign closed the year 1862, the second year of the war. It marked the end of an old era, the beginning of a new one in the medical department of the United States army; the end of working without authority, the beginning of control; the end of confusion, the beginning of method and order. Heretofore the medical officers of the army had been trying to work without control of their own personnel and material, to make bricks without straw. Henceforth they were to have the necessary means and authority; success or failure was to be in their own hands. But two years before the medical department had been no more than a hundred or more officers, each with a more or less adequate knowledge of medicine and surgery as practiced at that time. They might be compared to the body of chaplains today, except that they did have a chief.

The army had gone through the Mexican War with little more assistance from the medical department than would be rendered by the average family physician, and with little better results. In two years this department had become a body of two thousand officers, with nearly ten thousand men under its command or direction; with horsed ambulances and wagons running into the thousands; besides base hospitals with more than fifty thousand beds. And, what was vastly more important, it was no more simply a number of officers, but a compact organization, with personnel and material, ready to take the field and successfully handle ten thousand wounded men at once, as it had just done at Fredericksburg. At the beginning of the war the medical department had been even inferior to the army as a whole, itself contemptible in the eyes of Europe and to the various staff organizations. Now it could safely challenge comparison with any staff department, and was, in point of successful operation, superior to the army as a whole; and this in spite of the fact that no one of its members had a military education, while nineteen out of twenty of them came fresh from civil life during the two years. They had, however, this advantage over the mass of volunteer officers, that they were

all graduates in their own line of work, all members of a learned profession.

At Fredericksburg the wounded were handled in such a way as to give no grounds for any important criticism. Neither the numerous newspaper correspondents, the active and prying agents of the Sanitary Commission, nor the most unsparing critics of all—the medical journalists—could pick any noteworthy flaws in Letterman's work in this great battle. This work was in most respects equal to, and in some respects superior to, that



Surgeon Jameson's Headquarters, Stoneman's Station, 2nd Div., 3rd Corps, at Fredericksburg.

of any other battle of the war. It might be said that the hospitals should not have been taken across the river; assuredly they would not be taken over today. But conditions then were different. The wounded could not be brought back for some days; on account of certain infection of compound fractures many amputations were made in those days; these amputations had to be made at once. Waiting two days nearly doubled the mortality. So the operating must needs be done in Fredericksburg

in spite of poor buildings and occasional shells. Since the railway was so convenient and the army remained immobile, evacuation hospitals were not necessary. But the failure to establish some kind of a hospital or station at Aquia Landing was a neglect. In spite of all precautions trains will not always connect with boats on the minute. The Sanitary Commission repaired this fault. The handling of the wounded on the boats also left something to be desired, but, as said before, these were faults of detail and were not important. The broad plans, the grand tactics were excellent. As Surgeon Stevens said, it was the beginning of a new era in the medical department of the army.

How the medical department appeared to operate at that time may be learned from a letter of Chaplain Quint, an unsparing critic, who at first condemned the ambulance corps severely. About this time he wrote a letter in answer to general criticism of the care of the wounded, which criticism had been very common in New England. The letter is a justification of the work of the medical department. Only brief extracts can be quoted:

"At the head of the army is a medical director, who is virtually a medical autocrat; to each corps there is a medical director, to each division a medical director, and the senior surgeon in each brigade is acting medical director of the brigade. Now, besides this there is an ambulance corps. It is under the general charge of the medical director of the army. All the ambulances were long ago taken from the regiments and put under charge, not of the quartermasters, but of the medical powers. Each ambulance has its driver, permanently detailed. To our brigade there are assigned some thirty-odd ambulances, six or seven to a regiment. They are in charge of a lieutenant, permanently assigned. The brigadier himself cannot take one of these ambulances for a moment, so exclusively are they under medical control. I had occasion to need one lately. It had to be obtained by a requisition signed by our surgeon, and approved by our brigade surgeon. Not an ambulance can be used except to carry sick or wounded. I have seen these ambulances parked: they were in perfect order. The men are under strict discipline. As they are assigned to one duty they understand their business. The medical director has entire control and the ambulance corps is as distinct a body as the artillery.

"In case of expected movements the corps medical director issues his plans, to which the corps commander orders obedi-

ence. The hospital is established, one surgeon from each brigade is detailed as operating surgeon, with four or five assistants; others are ordered to report for general duties. The ambulances are stationed by personal direction of the corps medical director. Ten men from each regiment have the sole duty of removing the wounded from the field. They are picked men; they do no other duty, and each wears a conspicuous green badge on his breast. They use the stretchers which go with every ambulance, and carry the wounded to the ambulances, stationed near. Now what more complete ambulance corps can exist I cannot see. The only variation would be to enlist men especially for the corps, instead of taking them from the regiments. They now remain permanently detached and are under no regimental control. Such men were so taken from our regiment, with a sergeant, and to these men's care I would entrust my life.

"But how this system works is the next point. It works well. Not perfectly, for we have neither omnipotence nor perfect goodness in surgeon, ambulance driver or hospital attendant; but it works better and better. It has no defects that I can see would be removed if all the critics had *carte blanche* to devise a system; for its defects are mainly the incidents of frailty in man, not in plan. Possibly I am mistaken in thinking our well-regulated plan general. Possibly Doctor McNulty (M. D., 12th Corps) and Doctor Chapel (M. D., 1st Division) are exceptions in skill and sense. Possibly the splendid Twelfth Corps is as much a model in hospital matters as on the field of battle. But I do not believe that the other corps are far behind. I tell you, anxious reader, that while your and our wounded must suffer, cases of neglect are extremely rare. I bear my testimony to the general skill and kindness of the surgeons. I have been with many of them in bivouac where the slumber was by moments only; with them as they were tenderly handling the wounded; with them to see their unselfish devotion to duty. In our regiment (Second Massachusetts) one surgeon received an enemy's ball, and one has just laid down his life as a sacrifice to his unremitting labors."

Medical Officers at Frederickburg

Medical Director of the Army.....	Surgeon Jonathan Letterman, U. S. Army
Medical Purveyor	Asst. Surg. T. J. McMillin, U. S. Army
Medical Director, Rt. Grand Division.....	Surgeon A. N. Dougherty, U. S. V.
Second Corps	" J. H. Taylor, U. S. V.
First Division	" L. M. Knight, U. S. V.
Second Division	" J. F. Dwyer, U. S. V.
Third Division	" Grant, 7th West Virginia.
Ninth Corps	" F. A. O'Connel, 28th Mass.
First Division	" H. Hovet, 46th N. Y.
Second Division	" A. T. Watson, U. S. V.
Third Division	" M. Storrs, U. S. V.
Medical Director, Center Grand Division..	" John Moore, U. S. Army
Third Corps	" Geo. L. Pancoast, U. S. V.
First Division	" O. Everett, 20th Indiana
Second Division	" Thomas Sim, U. S. V.
Third Division	" J. Jameson, 86th N. Y.
Fifth Corps	Asst. Surg. R. O. Craig, U. S. Army
First Division	Surgeon J. Owen, U. S. V.
Second Division	Asst. Surg. W. R. Ramsey, U. S. Army
Third Division	Surgeon David McKinney, 134th Penn.
Medical Director Left Grand Division.....	" Charles O'Leary, U. S. V.
First Corps	" J. T. Heard, U. S. V.
First Division	" E. Shippen, U. S. V.
Second Division	" C. I. Nordquist, 13th Mass.
Third Division	" L. W. Reed, 1st Penn.
Sixth Corps	" Charles O'Leary, U. S. V.
First Division	" Geo. Burr, U. S. V.
Second Division	" S. J. Allen, 4th Vermont
Third Division	" S. A. Holman, 7th Mass.

THE GREATEST BATTLE OF THE WAR—GETTYSBURG

THE MARCH.

THE Battle of Fredericksburg was followed during the first week of May by that of Chancellorsville, which was very similar, in so far as the work of the medical department was concerned, but very different in the tactical action of the troops. These two victories encouraged the Confederate leaders to undertake another invasion of the Northern States, and this time on a more bold and extensive plan than that of the year before. Ewell's Corps left Fredericksburg early in June, passing through the Shenandoah Valley, and on into Pennsylvania. Longstreet and Hill followed, crossing the Potomac at Shepherdstown and Williamsport, June 24th-25th.

The Union army started from Falmouth on June 12th, marching first to the railway at Bealeton, and then to Manassas and Fairfax. There the army remained for a week, awaiting developments. When it was learned that the main body of Confederates were crossing the Potomac, the corps were put in motion again, and crossed at Edwards' Ferry, June 25th-26th; on the 27th and 28th they were in and around Frederick. Here General Hooker was relieved by Gen. George G. Meade two days before the great battle began. On the 29th and 30th the seven corps were moving rather cautiously toward the Susquehanna River. Ewell's Divisions were now at York and Carlisle, while Longstreet and Hill were about Chambersburg. On the evening of the 29th Lee ordered the concentration of his army, between Gettysburg and Cashtown, and next day the corps were marching on Gettysburg. On the evening of the 30th the First and Eleventh Corps were on the road from Emmitsburg to Gettysburg; the Third Corps was near Emmitsburg. The Headquarters and Reserve Artillery were at Taneytown and the Second Corps reached that place next morning. The Twelfth and Fifth Corps were on the Baltimore Pike, at Littlestown and Union Mills. The Sixth Corps was on the extreme right at Manchester. Of the three cavalry divisions, Gregg was on the right at Manchester; Buford on the left at Gettysburg; Kilpatrick in front at Hanover. All these troops were within an easy day's march of Gettysburg, except the Sixth Corps, which was 32 miles away. No order for concentration had been given.

2 MEDICAL DEPARTMENT IN THE CIVIL WAR.

The army now consisted of seven small corps. The grand divisions of Burnside had been abolished. The Ninth Corps had gone west and the Eleventh (Howard), and the Twelfth (Slocum) had joined. The return of the army for June 30th showed the following number of officers and men present for duty and equipped:

Infantry 74,192	Artillery 7,711
Cavalry 10,192	Special troops 3,178
Total 99,795	

Fox has made a very careful estimate of the number of officers and men of the various organizations actually carried into action. He fixes the number at 85 per cent. In addition, the largest corps of the army, the Sixth Corps, was scarcely engaged. Out of 16,387 men there were but 27 killed.

The march to Gettysburg was the longest and hardest march ever made by the Army of the Potomac. At the beginning the weather was exceedingly warm and the roads dusty. The troops, unaccustomed to long marches, were pushed twenty-five and thirty miles at a stretch. Night marches were common. The dust, heat, and lack of water, caused much suffering. Men died of heat and exhaustion on this march, but there is no record by which the number may be learned. Surgeon Perry, of the 20th Massachusetts, said: "On June 15th, when the march began, the heat was frightful, and so many men dropped from the ranks that I was incessantly engaged with the dead and dying, and consequently fell farther and farther to the rear." Fifer Barden said in his diary: "June 12. We had to march to Beverly Ford, though it was 27 miles. Many dropped dead on the road; four in our brigade died of exhaustion." This is not accurate evidence, but so many speak of these deaths that some must have occurred.

During the latter part of the march there were rains every day, which at least did away with the dust, but left mud instead. While there was straggling on this march it was generally with cause, not the needless straggling seen before Antietam. Marches that lasted all day and then far into the night were sure to leave stragglers along the road. An officer of the Third Corps wrote of the last march: "July 1st. Forced march at noon from Emmitsburg to Gettysburg. Soon men began to stagger from the ranks, and fall by the wayside. Every piece of woods through which we passed was filled with prostrate men from previous columns; and others all along the roadside, with no one to care for them, lay dying, and not a few dead. Mounted

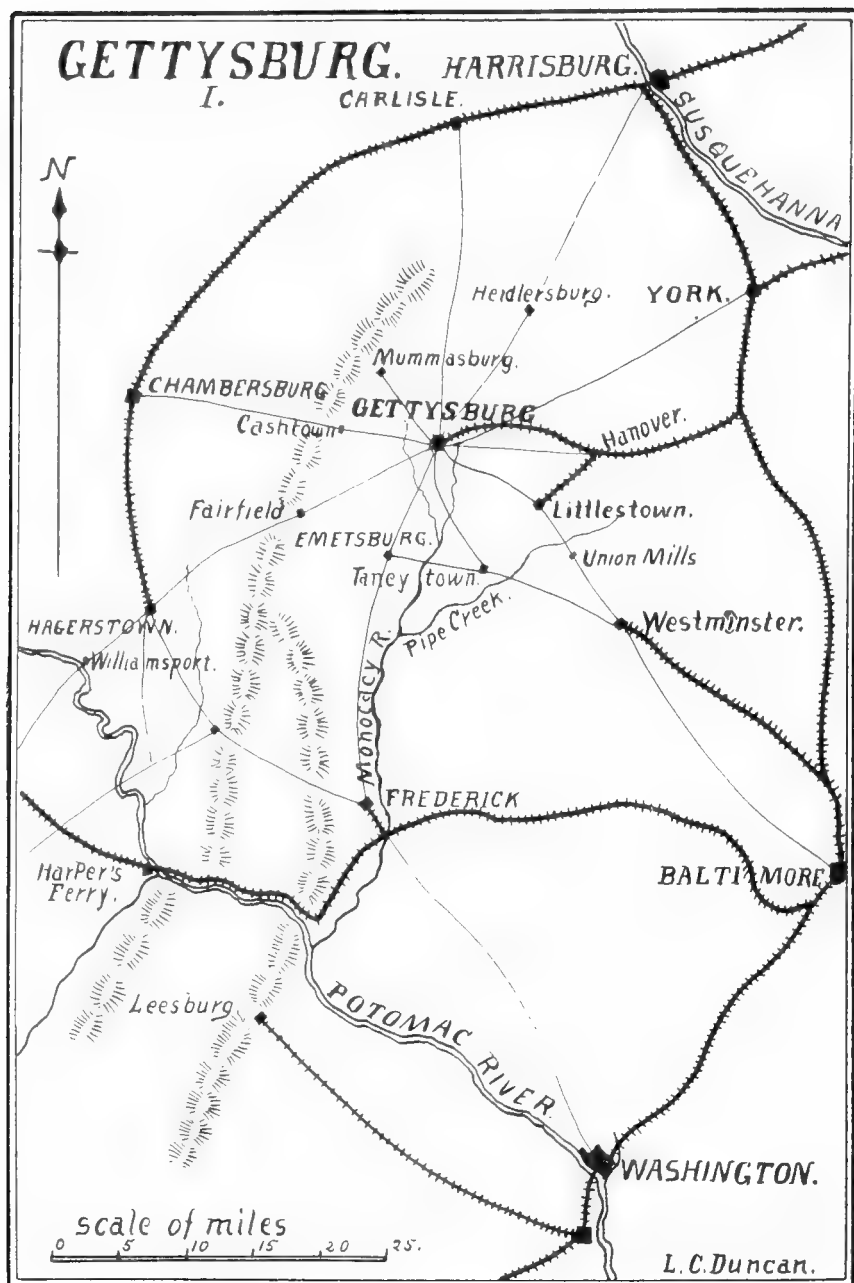
officers dismounted and loaded their horses with muskets and equipments. Forward, forward, was the cry, and we pushed on. Blankets, tents, clothing, food and equipments strewed the way, and when we reached the high ground south of Gettysburg and halted for the night, not over one hundred men and five officers were in line. The most of them came up before morning."

The army before Gettysburg was not particularly confident, but it was determined to make a good fight. All felt that they were on their own soil and must win now or give up the contest. While by no means so confident as the Confederates they were silently resolved to fight to the last on their own ground. The spirit of the army was expressed by Colonel Patrick O'Rorke of the 140th New York (a lieutenant of the regular army). General Meade had directed all commanding officers to address their men before the battle. Colonel O'Rorke was no orator and made a very brief speech, ending with a sentence which might well have been his epitaph, for he died that day.

"I call on the file closers to do their duty, and if there is a man this day base enough to leave his company, let him die in his tracks. Shoot him down like a dog."

The line of supplies during the Gettysburg campaign was continually shifting, as the army marched around Washington in the arc of a circle. At Falmouth it had been by the Potomac River. On reaching Bealeton Station the Orange and Alexandria Railway was used until the Potomac was crossed. The Baltimore & Ohio then became the main line, with railhead at Frederick. The army required 700 tons of supplies daily. On July 1st this line was abandoned west of Baltimore and the supply point shifted to Westminster, the terminus of a miserable little branch railway. This was a branch of the Northern Central, which had another branch to Littlestown, only ten miles from Gettysburg, and another from Hanover to the town itself. But these two branches had been destroyed and the road from Baltimore to Westminster, twenty-five miles from Gettysburg, was the nearest railway available. It was twenty-nine miles long, had neither sidings nor telegraph, and the trains covered the distance in five hours. As the Pike was shorter, a courier service was established, and mounted couriers every hour made the distance in three hours.

Colonel Haupt was put in charge and by running five trains in a group was able to put through fifteen trains each way in a day. With 150 cars he could carry 2,000 to 3,000 wounded daily.



Haupt started gangs of men working night and day on these ruined roads. He had the branch to Littlestown open by the 5th, and trains in Gettysburg on the evening of the 6th. The tracks were so flimsy and the management so grossly incompetent that no dependence could be placed in these roads except when in the hands of the military authorities. Fortunately the army had a splendid supply train of 4,000 wagons and never suffered for supplies. The train went to the rear on the first and did not reach the army again until the 7th. It was held in the rear until the Potomac was recrossed.

Baltimore, 55 miles from Gettysburg, became the base for the time being. This was especially true for the medical department. The greater part of the medical supplies were secured from that place and after the battle the wounded were sent there to be distributed to other cities further north. No wounded were sent to Washington. Baltimore had general hospitals for about 4,000 patients, York 1,500, Chester 1,000, Annapolis 2,500, Philadelphia 10,000, and New York 5,000, with others farther north. In Pennsylvania alone there were 15,000 beds. All these hospitals had patients, but as a general rule half the beds were empty.

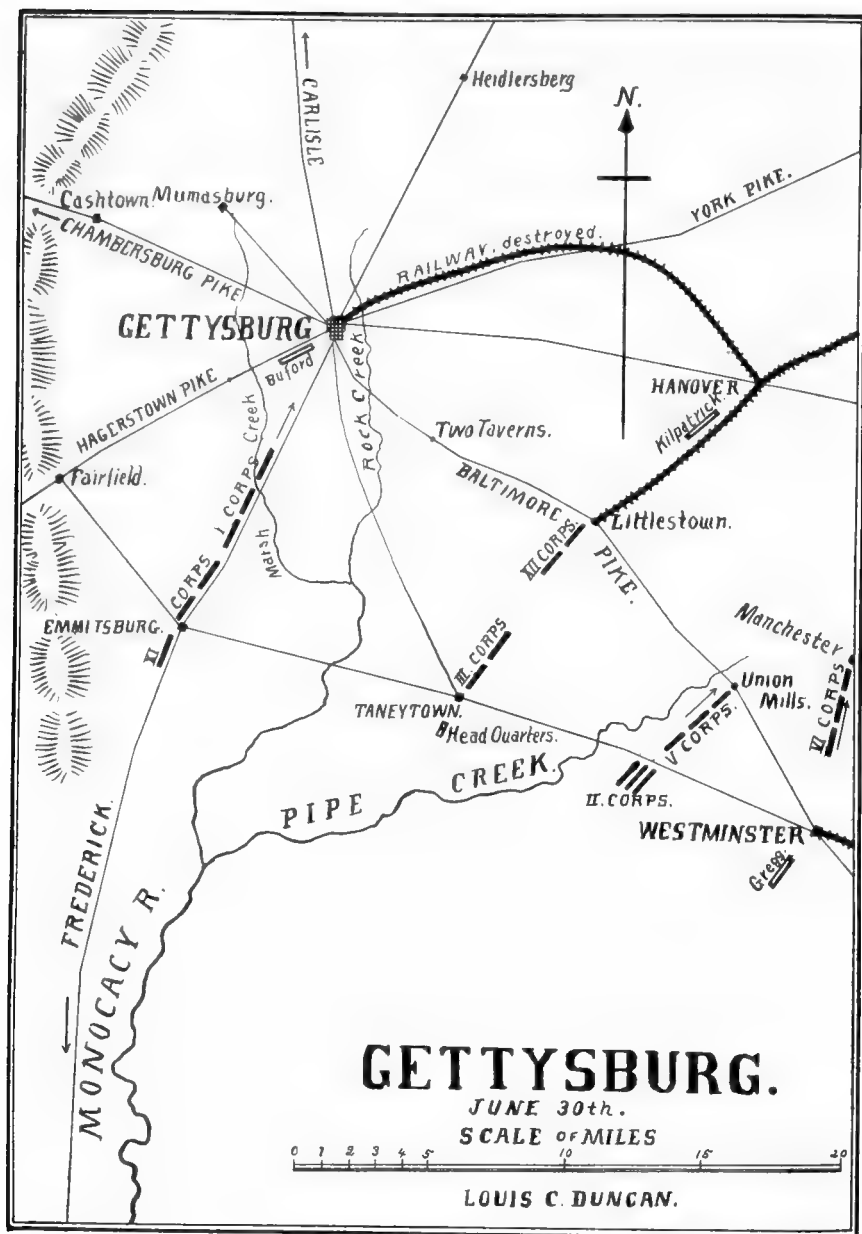
THE BATTLE.

FIRST DAY.

On June 30th Buford's cavalry division advanced from Fairfield to Gettysburg and moved out beyond the town, Gamble's brigade to the west, Deven's to the north, picketing all the roads. The First Corps was marching up by the Emmitsburg Road with the Eleventh Corps following, and the Third Corps was not far behind. These three corps formed a sort of left wing, under General Reynolds. A. P. Hill's Corps was likewise advancing on Gettysburg from Cashtown, while Ewell's Corps was coming in from the northeast on the Carlisle Road. On the morning of July 1st all these troops were marching on one point; though without design of battle, collision was inevitable.

Hill's advance division, Heth's, reached Willoughby Run, two miles west of the town, about 9 o'clock, and was halted by Gamble's dismounted troopers. They held back Heth's skirmishers until Reynolds arrived and hurried up his infantry.

The First Corps had bivouaced on Marsh Creek, four or five miles from the town. Wadsworth, leading the First Division up the Emmitsburg Road, did not pass through the town, but turned off at the Codori House and marched swiftly through the fields



to the Seminary, and beyond toward the McPherson farm. His two brigades, under Cutler and Meredith, were formed on right and left of the Chambersburg Pike just as Heth was sending forward the brigades of Davis and Archer. Meredith's Iron Brigade, in keeping with its former reputation, made a savage attack that broke Archer, taking him and many of his men prisoners, and driving the remainder beyond the Run.

North of the Pike Cutler was losing ground, until Wadsworth sent one of Meredith's regiments to his aid, when Davis was served much like Archer.

This ended Heth's advance for a time, and was one of the very finest achievements of the Union Army during the entire war.

At the very beginning of Wadsworth's attack General Reynolds was shot through the head and instantly killed. General Doubleday took the command and the fight did not falter for an instant. Heth now awaited the arrival of Pender's Division to organize a new attack with his whole force, some 14,000 men. Doubleday, and Howard, who had now arrived, were hurrying up all the troops within reach. Rowley's Third Division arrived by noon and was sent to the right of Wadsworth. Robinson's Division, following, was held in reserve at the Seminary. At 1 o'clock the head of the Eleventh Corps was coming over Cemetery Hill, but then Buford reported a new danger; two of Ewell's divisions were coming down from the northeast on the flank and rear of the First Corps. Two divisions of the Eleventh Corps were sent to the north of town to stay this advance, while the other division was held on Cemetery Hill as a "Rallying Point," a subconscious precaution against another Chancellorsville.

About 3 o'clock the battle began anew and with great violence. Heth and Pender with six brigades attacked the First Corps in front while Rodes with four brigades attacked the right flank. The six small brigades of Doubleday withstood this attack with the most steadfast bravery, suffering terrible losses, but inflicting still greater. At the same time General Early with four brigades attacked the two divisions of Howard (four brigades), and after an hour's fighting drove them from the field in rout. Now the First Corps, which had been forced back to the Seminary, being in danger of being cut off, retreated through the town to Cemetery Ridge. The retreating troops of the two corps crowded the streets.

Early's Division, which had no great losses, followed at the

heels of the Eleventh Corps, thus coming in the rear of the First. In the town about 3,600 prisoners were lost, besides many of the wounded. The Iron Brigade covered the retreat, the 6th Wisconsin holding the post of honor.

By 5 o'clock the remnants of the two corps were back on Cemetery Hill. The Confederates did not follow. The Twelfth Corps was at hand and the Third Corps was coming up. The cavalry had rendered most valuable assistance in all this fighting.

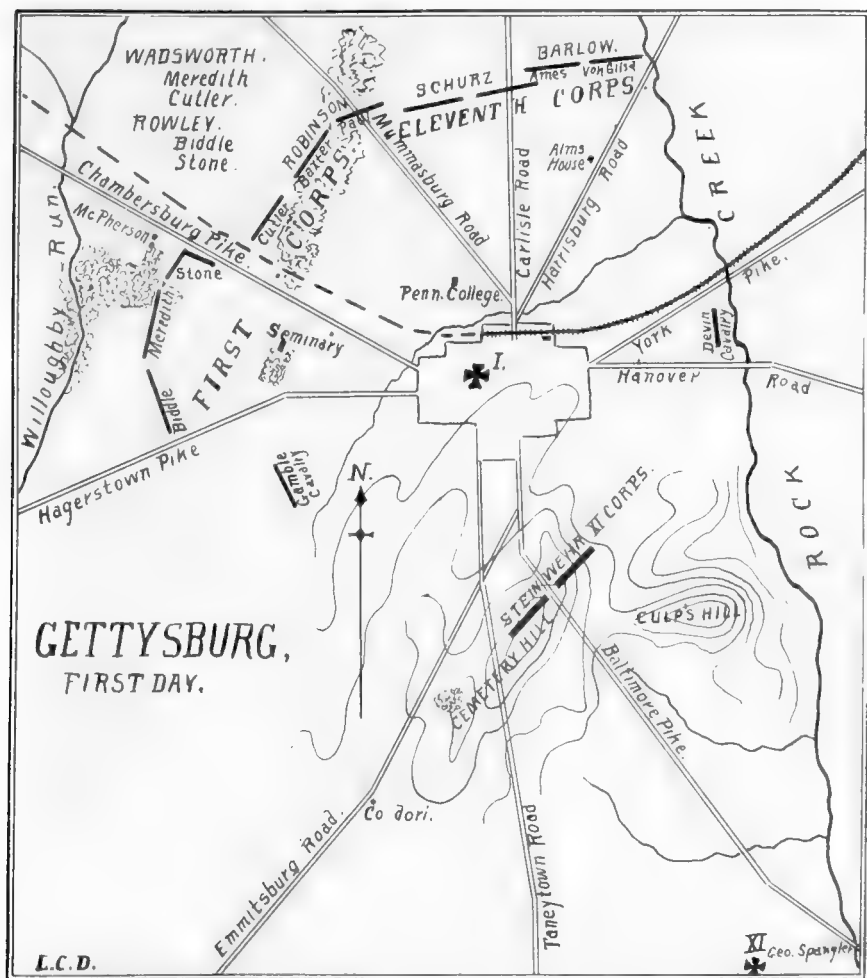
In this battle, though defeated, the First Corps had done as good fighting as the war produced. With six brigades it had withstood twelve fully as large during the greater part of the day, inflicting a greater loss in killed and wounded than it had received, and taking 1,200 to 1,500 prisoners, while losing almost none. But when the Eleventh Corps gave way it was caught in Gettysburg by still another division, Early's, and lost some 2,000 prisoners. When the regiments came together on the hill in the evening, only 3,000 of the 9,000 of the morning remained, yet but one gun and one color had been lost, neither taken in battle. When Longstreet's men were hurrying forward that night they met staff officers who had been on the field and asked them how the Yankees fought. The answer was in profane simile that gave no comfort; for the fighting that day was never excelled.

Vanderslice has made many interesting calculations as to the losses in various parts of this great battle. The losses as given by him are all too small, but are proportionately correct. By his figures the First Corps on this day lost 3,587 in killed and wounded; while the divisions of Heth, Pender and Rodes (less one brigade), opposed to it, lost 4,926. The First Corps had 2,173 missing, the Confederates 1,717. The total losses in this part of the field were: Union 5,760, Confederate 5,643.

In the battle of the Eleventh Corps, north of Gettysburg, the divisions of Schurz and Barlow lost 1,768 killed and wounded. Early's Division and Doles' Brigade, opposed to them, lost but 856. The Eleventh Corps lost 1,427 men as prisoners and took but 121. The total losses here were: Union 3,295, Confederate 976. The figures throw some light on the relative resistance offered.

Of all the fifty-one Union brigades at Gettysburg, the Iron Brigade had the heaviest loss, and the 24th Michigan of this brigade had the heaviest regimental loss. One other regiment had a heavier proportional loss, the First Minnesota. Two Confederate brigades had heavier losses than Meredith's, those of

Pettigrew and Davis, both of which opposed the Iron Brigade on the first day and took part in Pickett's charge on the third



day. Their losses here were greater than in the picturesque charge.

Also Heth's Division, which suffered so heavily this day, never reached the Union lines with Pickett's fresh brigades on the Third.

SECOND DAY.

On the evening of the 1st, General Meade, at Taneytown, received the unwelcome news of that day's battle, with the death of Reynolds and the driving back of his men. Orders were at once issued setting every corps in instant motion. Throughout that long moonlight night the pikes and roads leading to Gettysburg were filled with thousands of marching men, plodding wearily, sleepily toward the field that so many of them were to water with their blood. By the York Road, the Baltimore Pike and the Emmitsburg Road the silent columns pushed steadily forward, while up from Taneytown dragged the heavy trains of the artillery reserve. Though Meade was two days later than his adversary in issuing his order for concentration, all his troops were up when Longstreet was ready to attack. On the evening of the 1st the Twelfth and Third Corps were close at hand, but the Second Corps was ten miles away, the Fifth farther, and the Sixth was thirty miles from the field. By 9 next morning all were in place save the Sixth, which came up in good time during the afternoon.

The well known fish-hook line of the Union Army on this day need not be described. The Twelfth Corps was on the right at Culp's Hill; the Eleventh Corps on the north and east faces of Cemetery Hill; the First Corps divided, on either side the Eleventh. The west front of the hill was held by the Second Corps, while the Third continued the line south toward the Round Tops. The Fifth Corps was held in reserve near Rock Creek. Toward 1 o'clock Sickles moved the Third Corps forward to the Emmitsburg Road, with center at the Peach Orchard, and left obliquely to the rear. Longstreet, with the divisions of Hood and McLaws, made a most determined attack on this position at 4 o'clock, and, after severe fighting, broke Sickles and drove him back with heavy loss. The Fifth Corps was put in to relieve Sickles, also portions of the Second and Twelfth. Longstreet's men reached the slopes of Round Top, but were finally halted by the accumulated Union brigades. When the late darkness put an end to further action the Confederates held most of the ground fought over, but had failed to take Little Round Top, the key of the whole line.

Further north a part of Anderson's Division attacked Cemetery Hill and achieved a temporary success, but were driven back again. On the extreme right Johnson's Division attacked Culp's Hill and occupied some works that had been vacated by the

Twelfth Corps on going to the aid of Sickles. Just at dark Hay's Brigade (Early's Division) broke into a battery on East Cemetery Hill, but was driven out again. This was the last fighting of the day. When all these attacks had been checked the Battle of Gettysburg was won. The great losses and the decisive action took place on the second day.

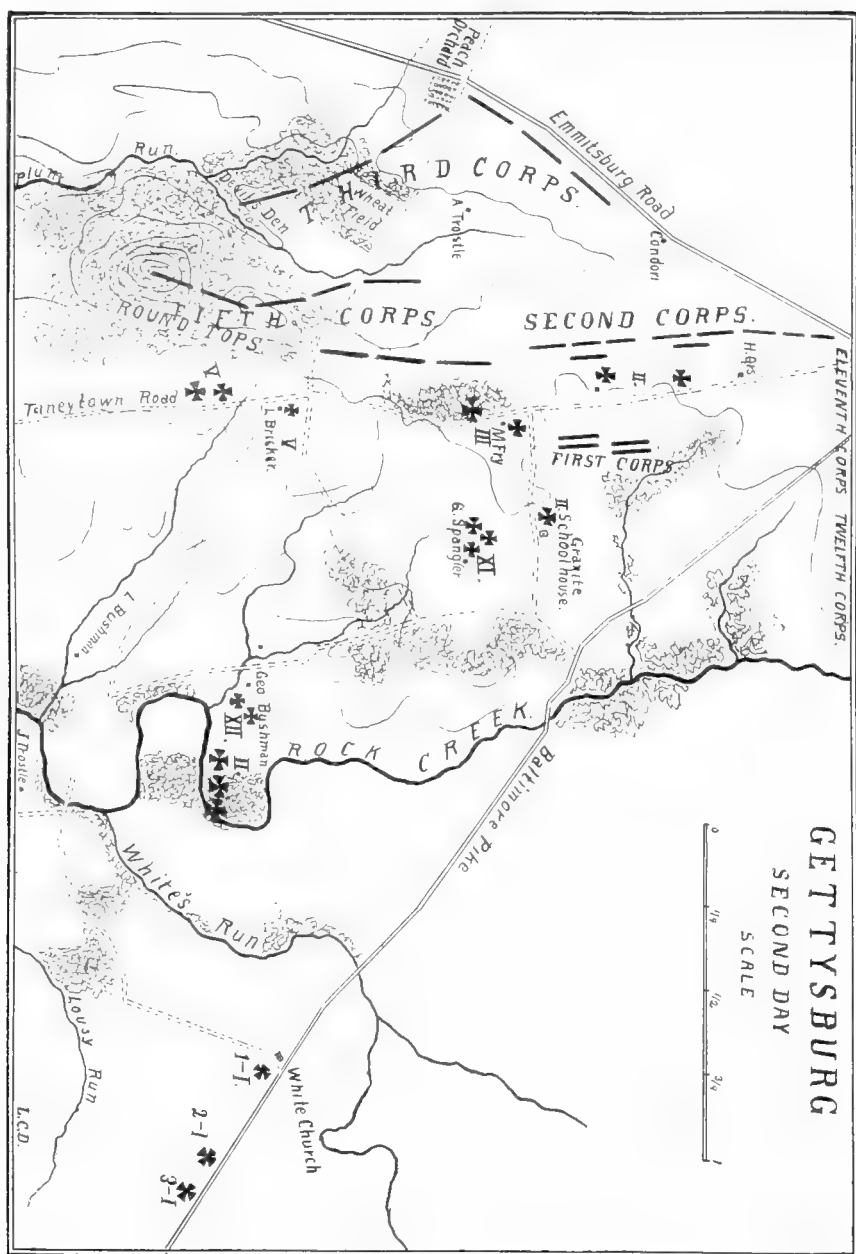
The open field on the crossroad, known as the Wheatfield, was the very vortex of the strife; it was fought over backward and forward by brigade after brigade, until it was almost carpeted with dead and wounded. The Peach Orchard, the rocky fastnesses of the Devil's Den, the ravines of Plum Run, and the slopes of Little Round Top, all were strewn with blue and gray commingled; and for many of them there was no help. In this fight the Confederates had the best end of the losses, as they nearly always did in woods fighting. In the open fields of the first day's battle the men of the First Corps had outshot them, but in this rocky, wooded region they had taken advantage of cover and, although confronted by both regulars and volunteers, had more than balanced the score.

Vanderslice estimates the losses on the second day as follows: In the whole battle on the left, including Peach Orchard, Wheatfield, Round Top, etc., the Union loss in killed and wounded was 7,540. The Confederate loss is given at 5,366; it was probably somewhat greater, but less than the other.

The Louisiana Tigers, reputed to be a most ferocious body of troops, in their charge had 27 killed and 153 wounded. The total Union loss this day was 1,825 killed, 8,528 wounded, 1,277 missing.

On the evening of July 2d nearly all of the wounded of that day's fight, some 8,000 in number, were collected behind the corps engaged along the Taneytown Road. Such an assemblage of maimed men, in so small an area, had never been seen before. An eye-witness of this spectacle, August Buell, wrote of it:

"We went down the Taneytown Road until we came to the bivouac of the Sixth Corps and thence to the Baltimore Pike by a cross road. The road ran close in the rear of the positions of the Second, Third and Fifth Corps, which had sustained the brunt of the main attack of the second day, and the whole of it was literally a field hospital. Our own wounded of the first day's battle had been mostly left in Gettysburg village, so that during the rest of the conflict they were practically in the hands of the enemy, and we could not see them or do anything for them. As we passed slowly along



the road we could see on every side, in the fields and around such farm buildings as had escaped the flames, and fairly lining both sides of the road, innumerable groups of wounded in all stages of misery; groaning, crying, swearing, begging for water or whisky, or for food; entreating the surgeons or attendants to come to them; some in delirium calling for friends; some even begging some one to shoot them, to escape from their present pangs; and the whole scene fitfully lighted up by the flaring lanterns of the hospital forces, or the flickering campfires of rails and boards. The fields toward the front were filled with the flickering lights of the stretcher parties, busy bringing additions to the wretched mass. Meanwhile the surgeons were at work as best they could in the darkness and confusion, dressing wounds, administering stimulants, and all that sort of thing. In the mile or so of road there must have been no less than 8,000 men, of whom 1,000 no doubt died during the night. No one will ever see again so much or such awful suffering, woe and despair in an equal space of ground."—*A. Buell.*

THIRD DAY.

There were two conflicts on the third day; also some cavalry combats. The Twelfth Corps returned to their works on Culp's Hill during the night to find them partly occupied by the enemy. Before daylight they began an attack, which, after five hour's fighting, resulted in entire success. About noon there was quiet over the entire field. In the afternoon occurred Pickett's Charge, which has been so often described as to need no account here. A few words as to the losses may be interesting. All writers dwell on the destruction that attended this assault, leaving the impression that the losses were phenomenal. These great losses will not bear examination. The heaviest losses in battle did not occur in attacks of that kind, which were quickly made and soon over with, but in the stand and fire contests like that of the first day. The losses of Pettigrew's (Heth wounded) Division in this charge cannot be determined, but those of Pickett's brigades, which must have been greater, are fairly well known, since these troops were not otherwise engaged:

Kemper had 58 killed and 356 wounded.

Garnett had 78 killed and 324 wounded.

Armistead had 88 killed and 460 wounded.

These brigades averaged about 1,900 men each. The 24th Michigan had 79 killed and 237 wounded out of 496 engaged, on the first day. The entire losses in Pickett's contest were: Union killed and wounded, 2,220; missing, 112; total, 2,332. Confederate killed and wounded, 3,060; missing, 2,260; total, 5,320.

The entire Union loss on the third day was 483 killed, 2,012 wounded, and 522 missing; or 3,017 in all.

On the evening of the 3d all the Confederate troops were drawn back to Seminary Ridge. During the 4th their trains were started to the rear, and at night the troops followed. All the wounded that could be transported, and many that could not, were collected and loaded in the empty wagons, to move with the trains by way of Chambersburg to the Potomac. Some six or seven thousand were too severely wounded for this heroic transportation and were left on the field, mostly collected in some sort of extemporized hospitals. The Union wounded in their hands were abandoned. On the night of the 4th the whole Confederate army retreated by the Fairfield and Hagerstown Road toward Williamsport. General Meade had not felt strong enough to attack and the retreat was only harassed by the cavalry.

The Union army remained on the ground until the 5th and 6th, then moved very cautiously toward Boonesboro and Frederick. It is sometimes said that General Meade was obliged to remain at Gettysburg two days in order to care for his wounded. This statement sounds like an excuse. Gettysburg was Meade's first battle, and a tremendous one. He had come out of it very well, though several times near ruin, and all his actions were those of a man not anxious for another such experience. The wounded were in friendly territory. There was an army of militia but a few miles away that could have cared for the wounded in some manner; not very well, of course. But had Grant and Sheridan been at Gettysburg they would never have waited two days to care for the wounded. I feel quite sure that when the whole army was eager to strike again and end the war, Letterman did not ask Meade to wait two days to care for the wounded. If he did he made a tremendous mistake. To destroy the enemy was the first object, to care for the wounded a subordinate one, as stated in all field regulations.

The losses in the whole battle, by days, was as follows:

First day,	847 killed,	3,989 wounded,	3,556 missing.....	8,402
Second day	1,825 killed,	8,528 wounded,	1,277 missing.....	11,630
Third day	483 killed,	2,012 wounded,	522 missing.....	3,017
Total	3,155 killed,	14,529 wounded,	5,365 missing.....	23,041

The muster rolls show 5,091 killed or died of wounds.

AMBULANCE WORK.

The number of the ambulances with the army at this time was about one thousand. They followed the troops to the field,

along with the ammunition wagons. Their work at Gettysburg was satisfactory, and need not be described in detail. The corps had reached such a stage of organization and experience as to be able to cope with any ordinary situation. As the fifteen thousand wounded were distributed through three days the work of collecting them was not so concentrated as at Antietam.

The litter bearers followed the regiments and brought the wounded back to the ambulance stations, where they were taken up by the ambulances and rapidly conveyed to the hospitals. The ambulance corps was ready each day when the battle began, and finished its work during the following night.

On the first day ambulances were running early, from the front back to the hospitals in the town. When the field was lost the ambulances were filled with wounded and all brought off safely. Many wounded were necessarily left behind, but within the enemy's lines. The Corps engaged this day were well supplied with ambulances. The Eleventh Corps had 100 ambulances, 9 wagons, 270 men and 260 horses.

On the second day the ambulances of the Second and Fifth Corps were at work early, but the greater part of the wounded were collected during the night. Here, also, many wounded were left behind, but next evening the ground was regained and on the night of the 3d the ambulances were again busy collecting these wounded. The wounded of the third day were easily removed. By the morning of the 4th all the wounded had been brought in save some out toward the McPherson farm, where the enemy still lingered. The ambulances in this battle had double work for a number of the hospitals, after being filled, were removed to other locations. They had been placed too near the front.

A fair sample of the work of the ambulance corps is afforded by the report of First Lieut. Joseph C. Ayer, of the First Division, Fifth Corps, which is here given in a condensed form, with a few explanations in parentheses:

"As soon as the division was placed in position all my stretcher men, under their lieutenants and sergeants, were sent to the front to follow their respective regiments; leaving one lieutenant and three sergeants in charge of the train. I conducted the train to a point two hundred yards in rear of the second and third brigades, where it was rapidly loaded with severely wounded. Owing to some misunderstanding there was a delay in locating the division hospital and the wounded men remained in the ambulances about an hour, when the hospital was established and the

wounded unloaded. The ambulances then commenced regular trips to the battlefield and were constantly at work during the night.

"As soon as all the wounded were secured, orders came to me to remove all the wounded in the field hospital to one farther in the rear. (The hospitals of this corps were moved on July 3d.) Previous to this, seventeen ambulances from my train had been ordered to report to the hospital of the Second Division, Fifth Corps, where they loaded with wounded, whom they conveyed to the rear. The whole of July 3d was consumed in removing the hospital. At sunset the horses were unharnessed for the first time in sixty hours.

"At about 10 p. m. an order came to me to send up my whole train to the front, to remove from the field the remaining wounded of the division. On reaching the field we found but one wounded man of the Fifth Corps, but there being a sufficient number of wounded of the Third Corps, I loaded my train with them and transported them to their respective hospitals. (These were wounded of Sickles' Corps, left in the enemy's hands on the 2d, but recovered by McCandless' advance on the evening of the 3d.)

"The train returned to camp near sunrise on the 4th. Having unhitched and fed, I hitched up again at 9 and reported to the several corps and division hospitals of the army, and collected as nearly as possible all wounded men of this division who had been taken to other hospitals.

"On July 5th the ambulance corps received orders to move and follow the division towards Emmitsburg, leaving two ambulances and four men at the division hospital (left behind).

"I estimate the total number of wounded removed from the field by the corps (First Division) to have been 560; of the Third Corps, 82. There might also be added 430 transported from one hospital to another, 53 for the Second Division, and 32 collected from other hospitals; total, 1,157, on July 2d, 3d and 4th."

The Fifth Corps, with about thirty-five regiments, some of which were battalions, had eighty-one ambulances. The wounded of this corps, 1,611 in number, were scattered over the slopes of Round Top and as far forward as the Wheatfield. The ambulances went to work at 4 p. m. on the 2d, carrying the wounded to the hospitals in rear of Little Round Top. At 4 next morning the work was complete; thirteen hundred wounded had been collected, beside some for other corps.

A very large number of wounded lay about the Wheatfield, Plum Run and the Devil's Den during the night of the 2d and all the following day, or until the advance of McCandless' brigade on that evening cleared all this portion of the field of the enemy.

Gen. S. W. Crawford (Third Division, Fifth Corps) says in his report: "By this charge of McCandless' Brigade the whole of the ground lost on the previous day was retaken, together with all of our wounded, who, mingled with the rebels, were lying uncared for together. The dead of both sides lay in lines in every direction, and the large number of our own men showed how fierce had been the struggle and how faithfully they had contested the field. * * * Our wounded were at once cared for, and under the able and prompt management of Surgeon G. W. Reed, Chief Surgeon of this Division, moved to hospitals in the rear."

MEDICAL SUPPLIES.

Owing to several different causes medical supplies were insufficient at Gettysburg. From the inaugurating of Letterman's supply scheme the allowance of transportation for the medical department had been one wagon to each regiment, and one to each brigade, of about fifteen hundred men. This allowance had proved sufficient for all ordinary needs, although it was half what had been found insufficient under the old lack of system.

On June 19th, while the Headquarters was at Fairfax Court House, the number of medical wagons was cut down to three for each brigade. This order compelled a reduction in the amount of tentage, bedding, food, etc., carried, amounting to about six wagon loads to each division. For the whole army it made a reduction of about one hundred medical wagons. Letterman protested, in vain. Failing to secure a restoration of the former allowance he turned to another device. A reserve supply train of twenty-five wagons was decided on. Medical Purveyor Brinton was ordered to Washington to collect this supply train and rejoin the army. I believe this was the first large train of reserve supplies for the medical department in the Army of the Potomac.

Surgeon Brinton reached Frederick with his train on June 28th; the army had arrived the day before. On the 29th his train followed the Headquarters to Taneytown. On the 30th everything there stood still until word of Reynold's battle was received, when all the trains were ordered to the Baltimore Pike in front of Westminster, the new advance base of the army.

On June 30th General Meade had issued a preparatory circular to his corps commanders providing: "Ammunition wagons and ambulances will alone be permitted to accompany the troops." On June 1st it was ordered that "Corps Commanders will at once send to the rear all their trains, excepting ammunition wagons

and ambulances, parking them between Union Mills and Westminster." On the 2d these trains were ordered still further to the rear, and parked about Westminster, twenty-five miles from the field. This order deprived the division hospitals of nearly all their supplies during the battle. Fortunately, in most of the divisions the special medicine wagons (Autenreith) remained with the ambulance trains, otherwise the surgeons would have been helpless. These special wagons gave a moderate supply of anesthetics, dressings, drugs and instruments, which served until the wagons were allowed to come up; but tents, bedding, clothing, cooking utensils and food were almost entirely lacking.

As the battlefield was soon visited by thousands a great outcry against the medical department arose, on account of shortcomings for which it was in no way responsible. When the battle closed on the evening of July 3d Letterman requested of General Meade that the hospital trains be allowed to come up, but the cautious General allowed only one-half the wagons to do so. The remainder did not arrive until the 5th. Medical Purveyor Brinton arrived with his train on the evening of the 4th. The Twelfth Corps in some manner escaped both the reduction in supply wagons and the order sending trains to the rear. In consequence the medical officers of this corps were able to shelter, dress, feed and care for their wounded as well as had been done at Fredericksburg. No other corps did anything like as well.

Letterman claimed that there were ample supplies at Gettysburg and could quote all the four or five medical inspectors that visited the field, to that effect. But all the reports of the Sanitary Commission agents, and of other independent visitors, are to the contrary. The enormous amount of supplies furnished by the Commission, and by many other civilian bodies, seem sufficient evidence that the medical department was not able to furnish all the needed medical supplies. Part of the difficulty was in distribution over such a widely extended territory, with such limited transportation, the army moving away on the 6th, and leaving but few ambulances and wagons behind.

The chief lack was as usual in tents, bedding, clothing and food. Of these, the lack of food was naturally most pressing. During the battle there was little to be had. On July 4th Chief Commissary Clarke distributed 30,000 rations to the hospitals, then containing approximately 16,000 wounded. From that time on there was an ample supply of ordinary rations, but there was still a want of hospital delicacies. After the retreat of the Con-

federate army, and when the want of supplies became known, food and supplies of all kinds were poured in from the northern cities and towns in enormous quantities. The supplies furnished by the Sanitary and Christian Commissions will be mentioned later. It was only during the first week that there was suffering on account of lack of supplies. One of the Sanitary Commission agents said: "After this battle relief came promptly; it was on our own soil and the great heart of the people was stirred to its depths. All of home luxuries that could be were lavished with an unsparing hand. The Government, fully equipped for the contest, had medical and hospital stores abundantly supplied. With its perfectly organized system and immense resources the U. S. Sanitary Commission was ready to fill demands which the Government could not. There was no long continued suffering as in the earlier battles." If, in the beginning, the wounded suffered for lack of food and supplies, in the end they were in danger from too much.

The failure of the medical department to furnish sufficient supplies at the beginning was due to several causes. One was the holding of the trains far in the rear. But the main cause was that the number of wounded, twenty thousand, was beyond its capacity. The department could handle ten thousand comfortably, and could have managed the fourteen thousand Union wounded reasonably well; but the six thousand Confederate wounded, all severely wounded, with the lack of trains, and with railway transport cut, piled up a mass of difficulties that was beyond its capacity.

It is of interest to hear how the Medical Department of the Army was prepared for battle when the two armies faced each other a few days later at Williamsport. Letterman, having been criticized for his work at Gettysburg by Inspector Johnson, made a spirited and satisfactory rejoinder, in which he stated that notwithstanding the tremendous strain of the battle his department was in a very short time again ready for battle. He said:

"Previous to leaving Gettysburg, on the 5th and 6th of July, I had ordered supplies to be sent from Washington and Philadelphia to Frederick, to meet the wants of the medical department in the event of another battle, which there was every reason to suppose would occur shortly after the army left Gettysburg. While at the latter place (Gettysburg) I asked the Surgeon General to have fifty medical officers ready to meet me at such a point as I should thereafter designate. On July 7th I desired them to be sent to Frederick; late on the night of the 9th 47 of

them reported. These officers were assigned to make up, as far as possible, the deficiency of officers existing in consequence of the large detail left at Gettysburg. Five hundred tents were received and the corps supplied as far as their transportation would permit, and the remainder kept in reserve. * * *

"I can state for the information of the Commanding General that notwithstanding the short time in which I had to make the necessary preparation, the Department was, when near Boonesboro, fully prepared to take care of the wounded of another battle of as great magnitude as that which the army had just passed through at Gettysburg."

As the battle did not occur the hospitals were not actually organized until the army reached the Rappahannock, during the first week of August.

FIELD HOSPITALS.

The field hospitals were, for this period of the war, generally unsatisfactory. Owing to the order sending all trains to the rear, they were about on a par with those at Antietam. The wounded were collected in houses, barns, groves, and in any place that offered shelter or shade. While the weather during the battle was fine, there were heavy rains on the 4th and 5th, making shelter a necessity. The vast number of wounded made it impossible to secure it for all, but the more severely wounded were in general under some kind of cover. The less severely wounded had to be content with shelter tents or worse, and the slightly wounded had to look out for themselves. Medical Inspector G. K. Johnston said in his report:

"There were some in churches, some in barns, some in tents among the fruit trees, some in tents in the fields, some under such shelter as a farmer would be ashamed to show for his cows. Some were under blankets hung over cross-sticks, and some without even so much shelter as that. There were some scattered groups of men outside the hospitals. It sometimes appeared as if an experiment had been made to see how many wounded could be crowded into a given space in a house."

All the severely wounded were under some kind of cover by the 4th. The operating was not completed before a week had passed, and it was as long before there was sufficient bedding. The work of all the hospitals was checked when the army marched away on the 6th. There were no evacuation hospitals to take over the work. The tents, bedding, and most of the supplies of the division hospitals, were left behind, but not enough surgeons could be spared. Letterman left 106, about one for each 150

patients. He asked that an emergency corps of twenty surgeons be sent, but intimates that they never came. Several hundred medical men from the neighboring states came in and remained until the rush of work was over.

Carl Schurz has left a description of the field hospitals as he saw them. It is probably accurate in the main, but the surgeon who held his amputating knife in his teeth was no doubt the striking exception.

"Most of the operating tables were placed in the open air, where the light was best, some of them partially protected against the rain by tarpaulins or blankets stretched on poles. There



stood the surgeons, their sleeves rolled up to their elbows, their bare arms as well as their aprons smeared with blood, their knives not seldom between their teeth, while they were helping a patient on or off the table, or their hands otherwise occupied; around them pools of blood and amputated limbs in heaps.

"Antiseptic methods were unknown at that time. As a wounded man was lifted upon the table, often shrieking with pain, the surgeons quickly examined the wound and resolved upon cutting off the wounded limb. Some ether was administered and the body put in position in a moment. The surgeon snatched his knife from between his teeth, where it had been while his hands were busy, wiped it once or twice across his blood-stained apron, and the cutting began. The operation accomplished, the surgeon would look around with a deep sigh and then—'next.'

"There was a great difference in the attitude of surgeons. There was a surgeon of the 16th Massachusetts who fairly

revelled in operating. As soon as firing began he would roll up his sleeves and await the first man to be brought in with a positive appetite. Weird stories were told of operations he performed when there was no chance of recovery, but unusual chance for experiment. Disarticulation of the hip was said to have been done when the patient was in articulo mortis, and others of like condition.

"And so it went on hour after hour, while the number of expectant patients hardly diminished. Now and then one of the wounded men would call attention to the fact that his neighbor lying on the ground had given up the ghost while waiting his turn, and the body was quietly removed. Or, a surgeon, having been long at his work, would put down his knife, exclaiming that his hand had grown unsteady, and that this was too much for human endurance—not seldom hysterical tears streaming down his face.

"There are many who speak lightly of war as a mere heroic sport. They would hardly find it in their hearts to do so had they ever witnessed scenes like the above. A war brought on without the most absolute necessity is the greatest and most unpardonable of crimes."

An example of those remarkable operations mentioned by Schurz will bear recalling. At the fight of King's Division near Gainesville, before Second Bull Run, a man was brought in shot in the hip. This battle began at sundown and the column had been marching all day. The hospital wagon was hurried up, operating began, and Surgeon Peter Pineo did a resection of the head of the humerus. Before the Civil War this operation had been done but twelve times, and in the whole war was done only thirty-two times, almost always in fixed hospitals. The man was left on the field and probably died in a few hours. The resected bone is in the Army Medical Museum, specimen No. 71—New No. 98,211—84,132.

FIRST CORPS. The First Corps arrived on the field by the Emmitsburg Road. The First Division, two hours in advance of the others, was accompanied only by the regimental surgeons and a few ambulances. There was no time for selection of hospitals; the battle opened at once and savagely. This was a division that never hesitated to attack and the losses here were the heaviest of the battle. The wounded were soon drifting to the rear in numbers, mostly without assistance, unless that of comrades. A sort of division hospital was established at the Seminary; it was little more than a collecting place and dressing station, less than half a mile behind the firing line. After the repulse of Heth's bri-

gades there was a lull in the battle, giving time for some attention to the wounded, and they were as a rule secured.

By noon Rowley's Division was arriving, followed by the artillery and ambulance train. Medical Director Heard says the ambulances of the corps were combined in one train, together with the brigade medicine wagons. There were no hospital or supply wagons, all these being held far in the rear, as already stated. This ambulance train appears to have gone to the Seminary and all three division hospitals were first established at that point.

On the afternoon the battle was renewed and in spite of a desperate resistance the First Corps was overpowered and driven back; first to Seminary Ridge, then through the town to Cemetery Hill. The surgeons meanwhile retired to the town, establishing new hospitals, in the Lutheran and Catholic Churches, the court house, several warehouses near the railway and in many other buildings. Some five hundred wounded were collected in these buildings, but many of the most severely wounded were left scattered over the field. For these there was very little care during the next two days of battle. When the last resistance at the Seminary was broken down all the ambulances were loaded with wounded and brought off in safety. No ambulance of either First or Eleventh Corps was lost. Medical Director Heard chose to remain behind with his wounded and retained a number of surgeons who were prisoners until the 4th.

An unfortunate accident of the street fighting that evening was the death of Chaplain Howell, of the 90th Pennsylvania. He had just come out of the Lutheran Church, where he had been assisting with the wounded, when the Confederates came rushing into the town. Wearing a sword he was taken for a combatant officer and called on to surrender. Instead of doing so he began to expostulate against his capture and was instantly shot.

The first hospital in Gettysburg was established, not by army surgeons, but by R. G. McCreary, a lawyer in that place. He says:

"In the afternoon (June 30th) Buford's cavalry division entered the town and proceeded a mile to the northwest, on the Chambersburg Pike, and halted for the night. Their medical officers requested accommodations for six or eight men of the command, who were sick. I procured the use of the railroad depot (the road was destroyed), and with a couple of assistants soon had it cleaned out and twenty beds carried in, and they were soon all filled with suffering men, for whom food and delicacies were speedily supplied by families in the neighborhood."

Concerning the capture of the town and what then happened he says:

"I ascended the housetop and found that the army was falling back, and soon the rush and roar of the retreat and battle in the streets banished everything else from our minds. That was a terrible night; our army had been driven back, and the town was full of armed enemies.

"The morning of July 2d revealed a dreadful sight—dead horses and men lying about the streets, and there were none to bury them. Our first care was for the multitude of wounded men now suffering from want of food. I sallied forth, taking care to lock the door after me. I found the bakeries were in the hands of the Rebels, and not a loaf or cracker remained; the butchers' cattle had been driven away or confiscated, and no meat could be procured; the groceries were broken open and their contents carried away, or destroyed by troops of Rebels, who, like hungry wolves, roamed through the streets in search of plunder. The citizens had freely distributed to our own soldiers and had little left in their houses; but they did what they could, even denying their own families in order to give something to the suffering men.

"In my own family we had a good supply of coffee and other most useful articles; a twelve-gallon boiler was many times replenished and its contents carried in buckets to the different hospitals within reach, and, with baskets of bread and other edibles, distributed to the wounded. In the rear of my residence, in an open lot, a Rebel commissary cut up and distributed beef to a company of cavalry. My wife solicited and obtained from him the beef bones left on the ground, and speedily converted them into excellent soup; until in this way probably one hundred gallons of this nourishing food had been distributed to the different hospitals.

"Our surgeons, who remained with these men and permitted themselves to be taken prisoners, were greatly embarrassed for want of supplies, as the Rebels would not or could not supply any. The ladies of the town freely devoted their linen and muslin goods to supply lint and bandages, but the lack of medicines was not so easily supplied.

"Allow me here to remark that the stories published, charging the people of the town with a want of hospitality toward the soldiers, are basely false. In those days of suffering I gathered bread from house to house, and the last loaf and half loaf was always cheerfully given.

"During the battle of the first day, when shells were shrieking and bursting around the hospitals, even the women were found in the midst of the wounded men as they were carried in from

the field; and from that time on all through the terrible days, and afterwards down to the close, in every hospital, at all times, with a devotion that never flagged, or counted any sacrifice too great, our noble women were found, like angels of mercy, binding up wounds and administering food. Ask the many hundreds of wounded men, who filled the warehouses, halls, churches, and so many of the private dwellings, what they think of the hospitality of the people of Gettysburg.

"The Rebels, though disposed to help themselves, were generally civil, and even respectful toward the citizens. * * *

"The officers, until Saturday, seemed entirely confident of success. On Friday night the army quietly withdrew from the town to Seminary Ridge, and at daylight our skirmishers drove out or captured their stragglers and pickets. It was truly a joyful morning to the citizens, who felt as if some dreadful incubus had been removed.

"As soon as the town was cleared of the Rebel lines supplies began to come in and those in the hospitals were made as comfortable as the circumstances permitted; but there were still in the fields—the scene of the first day's fight—a large number, who for two days more could not be reached, and whose suffering must have been beyond description severe."

FIRST CORPS.

When the First Corps took station on Cemetery Hill new hospitals were established, on the Baltimore Pike, east of Rock Creek. The hospital of the First division was at White Church; of the Second Division at Peter Conover's house; of the Third Division at the house of Jonathan Young.

These hospitals after the battle are said to have contained 2,379 wounded, of whom 260 were Confederates. The three divisions of this corps had very heavy losses. The First Division had 1,229 wounded, the Second 616, the Third 1,279. The total loss was 666 killed, 3,231 wounded, or 3,987 out of less than 9,000 engaged. The wounded alone amounted to 36 per cent of the corps, a percentage for a large body that no medical department could be expected to cope with.

SECOND CORPS.

On June 30th the Second Corps was at Uniontown, having marched thirty miles from Monocacy Junction the previous day. On the morning of July 1st the corps marched to Taneytown, reaching that place before noon. At one-thirty the march was

resumed—to Gettysburg. The trains were sent to Westminster, the troops marched without tents, and with but few rations. On reaching the neighborhood of Marsh Creek, about ten that night, a halt was made, and the men bivouacked for the night. At day light the march was resumed and the field reached at seven, when the corps was placed in line from the Cemetery south to the right of the Third Corps.

The divisions were in order from left to right. There was no fighting until towards evening, when the First Division was sent to aid the Third Corps. This division, Caldwell's, had heavy losses; 187 killed and 880 wounded, mostly on the second day. The Second Division, Gibbon's, was engaged this day, and the next day bore the brunt of Pickett's charge. Out of 3,733 men engaged there were 344 killed and 1,202 wounded. The Third Division, Hays', was engaged on both Second and Third but the losses were not quite so heavy, being 238 killed and 987 wounded. The entire Second Corps had 797 killed and 3,194 wounded; total 4,991. General Hancock says there were about 10,000 men engaged. There were 13,056 present for duty equipped on June 30th and 6,130 on July 4th. The loss in killed and wounded was between forty and fifty per cent, a most remarkable one for an entire corps. The wounded amounted to at least twenty-four per cent, and possibly thirty-two per cent of the corps, which will explain why the work in the field hospitals of this corps was not an entire success.

	No. Wounded.	No. In Hospital.
1st Div.	880	846
2nd Div.	1,202	843
3rd Div.	987	739
Total	3,194	2,428

The total includes staff and artillery.

The hospitals of this corps were at first located in an opening of the woods, along the crossroad from the Taneytown Road to the Baltimore Pike, with headquarters at the Granite School-house. The hospital of the First Division was at a stone barn on the Taneytown Road. Other houses and barns in this vicinity were used for the immediate reception of the wounded. General Barksdale, of McLaw's Confederate Division, who was mortally wounded late that evening, was taken to the house of J. Hummerbach, which was a hospital of the Second Corps. When Colonel Willard, of the Third Division, was wounded, he was taken to the house of Louis Bushman, and died there.

This day's battle began on the extreme left of the Union lines but was gradually taken up by the Confederate troops to the left, and late in the day shells began to fall about Cemetery Hill and the hospitals in its rear. These locations became unsafe, so they were hurriedly abandoned, and the patients removed farther to the rear.

The hospitals were all moved to the rear at evening. Surgeon Peltier of the 126th New York, Third Division, says:—"I worked in the hospital till three in the morning, slept an hour on the ground among the wounded and was awakened by firing near at hand. * * * In the afternoon we made preparations to move our wounded to a less exposed position about two miles down in the woods." The division hospitals were now located together among the trees in a bend on the west side of Rock Creek, as shown in a number of maps. The location was safe and convenient, but the site was on very low ground. There was rain on the fourth and still more on the fifth, overflowing the low ground, and a part of the hospital. Some patients were in danger of drowning, scrambling out as best they could. Many were left lying in the mud. From all accounts the condition of the patients in this hospital was most miserable. Not from incompetence or lack of energy on the part of its medical officers, but because the flood of patients was entirely beyond their capacity.

In addition to the 2,400 Union wounded there were 952 Confederates, left behind during Pickett's attack, making a total of 3,400 wounded men, lying in a grove, with practically no tentage, bedding, clothing, or stores; except ordinary rations and medical and surgical supplies.

When the trains came up conditions improved, but at once the army marched away, leaving but thirteen medical officers to care for this mass of suffering men. Medical Inspector Johnson criticized this, as well as the lack of attendants and men for fatigue work. He said requests should have been made at once for surgeons, attendants, and supplies. It was a week before all the wounded were dressed and furnished with straw for beds.

Of the 3,400 wounded here 437 died, and of thirteen thigh amputations it is said that but one survived. While the hospital remained in this low damp place in the woods there were many deaths daily, but when the patients were removed to Camp Letterman the death rate fell off rapidly. The hospital was closed on August Seventh.

Reverend Williams of the Christian Commission gives an account of the Second Corps hospitals at Gettysburg which shows what lack of supplies and such an enormous amount of wounded leads to. It is possibly exaggerated, but the condition of this hospital before the trains came up was, by all accounts, a terrible one.

"In some respects the work of the Second Corps Hospital was the most interesting and important. There were at least 2,500 wounded men (3,400) in this hospital, which was located in a grove about a mile south of the Baltimore Pike, and between two and three miles from town. The men were in a terrible condition. They were upon the damp ground, many of them with nothing under them. In this hospital there was an unusually large number of amputations, the amputated stumps lying directly upon the ground, except when now and then elevated upon a handful of straw, or a bunch of old rags. Many of the men, perhaps most of them, were in want of clothing. Suitable food was not to be had. The surgeons were overworked, there was an insufficient number of attendants—every able-bodied man that could possibly be spared having accompanied the army in pursuit of Lee. Into this field the Commission entered. * * *

"There were nearly or quite a thousand Rebels (952), most of them severely wounded, lying on the outskirts of the hospital, shrieking and continually crying for assistance. The appearance of those connected with the Third Division of this corps beggars description. Destitute of clothing, many of them nearly naked, lying in the mud—for the sudden rise of the little stream by which they had been placed rendered it impossible to avoid this—cursing, praying, begging their visitors to put an end to their sufferings; here one and there another laid out by himself to die, these wretched men made the strongest appeal to Christian sympathy and benevolence.

"This condition was soon remedied and all that could be removed were taken to the General Hospital. Four hundred very severe cases remained, of which I believe that two-thirds died."

(To be continued.)

THE GREATEST BATTLE OF THE WAR—GETTYSBURG

(Concluded.)

THIRD CORPS.

ON the morning of July 1st the Third Corps was at Emmitsburg. In the afternoon it marched for the battle, Birney's Division first, Humphrey's following. These divisions reached the field by midnight, but two brigades left behind were not up until nine o'clock on the 2nd. The corps was posted in front of the Taneytown Road, from the left of the Second Corps almost as far as Little Round Top. Shortly after noon General Sickles moved the two divisions forward to the Emmitsburg Road, with the center of the line at the peach orchard, and the left division extending back toward the Round Tops. Here they were attacked at four by two of Longstreet's divisions, and after most deadly fighting finally had their lines broken and were forced back. Other troops came up late in the evening and they were retired to the second line, where they remained until the battle ended. All their heavy losses occurred in three or four hours on the afternoon of July 2nd. The First Division (Birney) had 271 killed and 1,384 wounded. The Second Division, 314 killed and 1,562 wounded. This division (Humphrey's) had the heaviest loss of any division engaged, a loss that alone would have accounted for a battle at the beginning of the war. On June 30th the Third Corps reported 12,598 officers and men present for duty equipped; on July 4th, 5,494. The total loss in killed, wounded, and missing was 4,211.

When the battle began near the peach orchard the wounded were taken to houses and barns along the Taneytown Road. Adjutant Roberts of the 17th Maine (First Division), who was wounded in the knee, says he was first taken to a hospital in the rear, but shells soon fell there and the place was abandoned. Later in the evening he was taken further back in the woods. Nearly every one who wrote in those times had an exasperating, indefinite manner of mentioning "a house near the road," or "a grove beside a small stream."

Surgeon J. W. Lyman of the 57th Pennsylvania was in charge of the hospital of the First Division. He says that on the 2nd, while the division was taking position on the left front, he rode

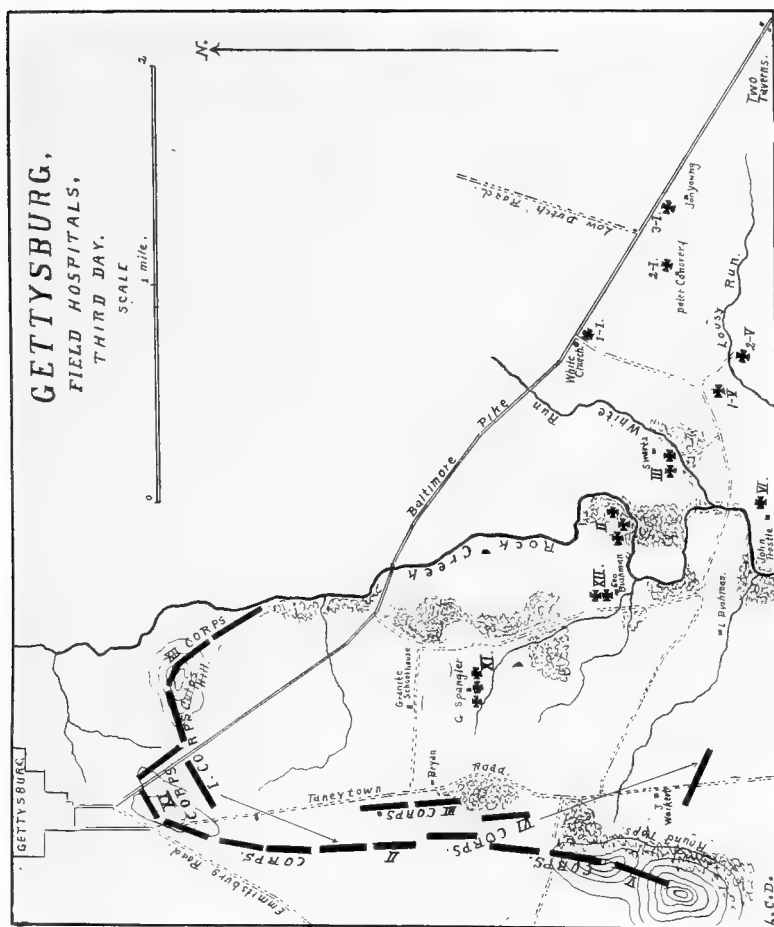
along the Taneytown Road looking for a location for the hospital. Finding all the houses already taken by the Second and Eleventh Corps he finally selected an old barn by the roadside. Everything was in readiness when the battle began. Soon the position was receiving not only shell, but also shot, and the place was abandoned for another at a large stone barn (Frank Suisher place?). This position was occupied during the remainder of the day and the night following, the entire force of medical officers being busily engaged all night in caring for the wounded. Early on the 3rd the acting medical director of the corps, Assistant Surgeon T. J. Calhoun, ordered the hospital again removed.

This last move took it across Rock Creek to an excellent site on a slope, with a fine stream of running water at hand. The operating tables were again set up; all were busy that day, the succeeding night, and the following day. The records show 813 treated in this division hospital. There were 97 operations, 53 being amputations, 17 of the thigh, and 11 each of the leg, arm and forearm. Many slightly wounded were dressed and sent away with no record. From the reports this division appears to have had some supply wagons with the ambulance train.

Surgeon Thomas Sim, U. S. V., was medical director of the Third corps. He left the field on the evening of the 2nd, accompanying General Sickles, who had been severely wounded, to Washington. Assistant Surgeon Calhoun took his place and ordered the hospitals further to the rear. The hospital of the Second Division also appears to have been near the front on the 2nd. An officer who visited it that evening says it was in a grove and the whole grove, several acres in extent, was literally crowded with wounded. When moved back next day the two hospitals were brought together. They were finally located east of Rock Creek, on the Schwartz farm, and southeast of the Second Corps hospitals. This place is on the north bank of White's Run, and 300 yards east of Rock Creek.

Only a portion of the wounded of the corps could have reached the hospitals directly after the great battle of the second. The troops retired from a large part of the ground on which they had fought, in some cases hurriedly; necessarily their badly wounded were left behind, in the peach orchard, the wheat field and the woods about the Devil's Den. These wounded were left within the enemy's lines and had little care during that night and the next day. On the evening of the 3rd McCandless' brigade of the Fifth Corps made a spirited advance and recovered a large

portion of this ground. This enabled the ambulance parties to go forward again and during that night and the next morning these wounded were brought in, along with some Confederate



wounded. The two division hospitals are said to have cared for more than two thousand wounded.

General Sickles was severely wounded on the evening of July 2nd, a shell smashing both bones of the leg. An amputation of the thigh was made in the corps field hospital and the General sent off to Washington immediately. A detail of forty soldiers

carried him over the twenty-five miles of road to the railway at Westminster in a litter. This expedient was thought at the time to have saved the General's life, as to have been carried this distance in an ambulance would probably have proved fatal.

FIFTH CORPS.

The Fifth Corps left Union Springs at 4 a. m. on the morning of the 1st and reached Hanover late in the afternoon, but had hardly made camp there when again came the order to march. The corps started at six that evening and marched all night, resting an hour, from three to four, only. The sternest orders, involving death to anyone leaving the column without permission, prevented straggling. The field was reached at six next morning and the corps posted near Rock Creek, as a reserve. It remained there until called on to aid Sickles, at four in the afternoon. Marching by a cross road, the Taneytown Road was passed in rear of Little Round Top, and the medical officers turned off there to establish their hospitals behind the sheltering hills; at the stone house of Jacob Weikert and at other places along the road. The divisions marched on west as far as the woods near the Trostle house, where they went into action, two brigades being detached and sent to Little Round Top. All three divisions were engaged, but the Third, the old division of Pennsylvania Reserves, on the extreme left, did not have such heavy losses as the others. This fight on the 2nd was the main battle; nearly two-thirds of the total casualties occurred on this day.

The hospitals of the Fifth Corps were nearest of all to the contested ground. In fact, they were too near; when the Confederates reached the slopes of Little Round Top, shells fell in and around the hospitals.

It is not generally known that General Samuel W. Crawford, commanding the Third Division, was originally a medical officer. He had served as an assistant surgeon for ten years before the war. Luck placed him at Fort Sumter in 1861 and some prominence in that affair secured his transfer to the line as major of the 13th Infantry. Within a year he was a brigadier general of volunteers. He was now a division commander and remained such until the end of the war, reaching the rank of major general.

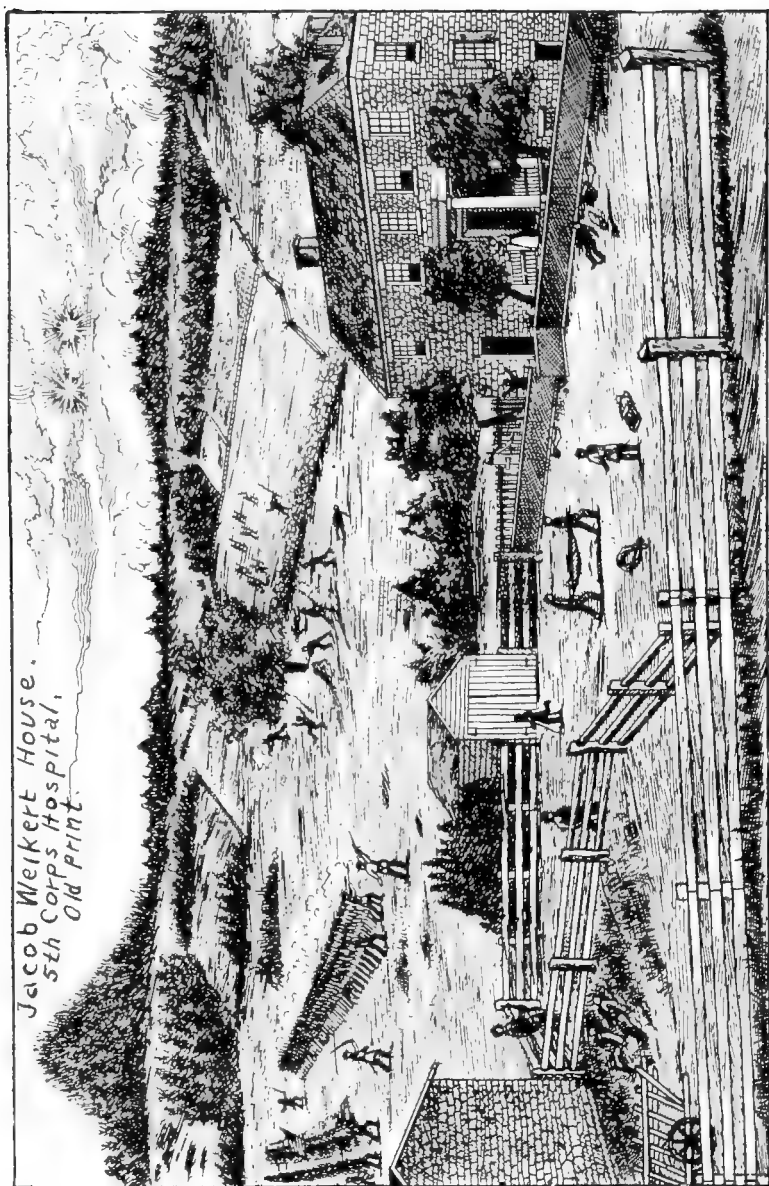
Surgeon Joseph Thomas of the 118th Pennsylvania has given a brief account of the hospital of the First Division of this corps. He says:

About eleven at night the ambulances were busy collecting and

carrying to the rear great loads of mangled and dying humanity. The wagon trains, with tents and supplies, had not yet arrived, and the wounded were deposited on the ground. The site selected for the wounded of the First Division was a field in rear of the Big Round Top, a little more than half a mile from its base. As they were removed from the ambulances they were placed in long rows, with no reference to the nature or gravity of their injuries, nor condition of rank. Friend and foe alike, as they had been picked up promiscuously, were there laid side by side. Soon the ambulances ceased their visits, as they had gathered up all that were accessible, or could be found in the darkness. There were about 250 or 300 thus collected and lying upon the ground, awaiting examination by the surgeon, as soon as dawn should appear to furnish light for the painful work. Opiates were administered to alleviate pain and water supplied to appease thirst. One of the surgeons then rolled himself in his blanket and sought a brief repose to prepare for the work of the morrow. But it was futile to attempt to sleep, for the horrors of the environment put this out of the question. At last morning dawned and at the same time orders were received to remove the wounded farther to the rear and out of range of the enemy's batteries. Ambulances were brought up, the wounded were again placed in them and taken to a more remote place, back of Rock Creek, where tents were subsequently pitched for them. In lifting them up it was found that many were dead.

This first location would to-day be called a collecting station or ambulance station; it does not appear that operating, or even dressing, was done there. The place was in a field, south of the Jacob Weikert house, and west of the Taneytown Road. During and after the battle all fences were destroyed, and while ambulances followed the general direction of the road, they entered and crossed fields freely. The road running southeast from the Round Tops was the main ambulance road from the center and left of the field.

Assistant Surgeon John S. Billings, U. S. Army, was on duty with the Second (regular) Division of the Fifth Corps and was placed in charge of the field hospital of the division, which was established at the house of Jacob Weikert, back of the Round Tops and on the Taneytown Road. This hospital was probably as well managed as any in the army. By midnight it had received 150 patients. The seriously wounded were in the house, under the trees and in the big barn. The slightly wounded picked their own places on the outskirts. About midnight Medical Director



Letterman came around and said that he had just learned that this particular place would be shelled by the enemy early in the morning, so preparations were made to move to a safer locality.

Accordingly, the hospital was moved. But Billings' report is such a complete and graphic narrative of the operations of a field hospital at that time that it will bear repetition:

I accompanied my regiment until they were under fire and was then ordered to repair to a large stone house and barn near the base of Round Top, and there established a field hospital. When I reached the place our skirmishers were lying behind the stone walls around the house, and as I rode up a small body of Rebels, about seventy-five yards off, saluted me with a volley. They were captured a few minutes afterwards. On entering the house I found evident traces of the hasty departure of its inmates. A good fire was blazing in the kitchen stove, a large quantity of dough was mixed up, the bakepans were greased, everything was ready for me. I immediately set my attendants at work baking bread and heating large boilers of water. In five minutes I was joined by the other medical officers detailed for the hospital. The ambulance train reported fifteen minutes later, and with it three Autenreith wagons, and by the time operating tables were set up and materials for dressings arranged, the wounded began to pour in.

I performed a large number of operations, received and fed 750 wounded, and worked all that night without cessation. An agent of the Sanitary Commission visited me in the evening and furnished me with a barrel of crackers and some lemons. Of stimulants, chloroform, morphine and dressings, the Autenreith wagons furnished an ample supply.

On July 3d, at 7 a. m., I was ordered by Medical Director Milhau to remove the hospital one mile to the rear. This was done as rapidly as possible. A few shells began to drop in as the first train of ambulances moved off and by eleven o'clock the firing on that point was quite brisk. Little or no damage was done, however, and by four o'clock all the wounded were removed. The new site was a large grove of trees, entirely free from underbrush, on the banks of a little creek, about a mile from the Baltimore Pike. By means of shelter tents, india-rubber blankets, etc., shelter was arranged for the worst cases, and two thousand dry rations with three oxen were sent to the hospital by Dr. Milhau in the course of the afternoon.

All that day I was employed in operating and dressing the more urgent cases. The following morning (July 4th) it began to rain and continued to do so for five days and nights with little cessation. On the morning of the 5th the medical supply wagons came up, and from them I removed all the hospital tents and

flies and two mess chests. On that day the army moved. I was left behind in charge of the hospital, which then contained about 800 wounded. Twenty men were detailed from the division as assistants. I was also given two ambulances and two army wagons. The ambulance train and Autenreith wagons accompanied the division. By this time Assistant Surgeon Brinton had reached White Church with a special supply train and from him I procured such supplies as were most needed. The greatest want I experienced was tools. I had not a shovel or a pick with which to construct sinks, or bury the dead, and no axes. I was compelled to send a foraging party to the farmhouses, who, after a day's labor, procured two shovels and an ax. Seventeen hospital tents were pitched, and in them were placed all the most severe cases, about seventy-five in number. Under the tent flies I placed one hundred more patients; the remainder were under shelter tents, arranged by regiments. By means of the wagons I procured abundance of clean, fresh straw, from about five miles distant. Commissary stores and fresh beef were furnished *ad libitum*.

Assistant Surgeon Bacon reported that the health of most of the surgeons of this hospital became impaired by reason of the excessive labor required. Of eleven surgeons on duty there eight became ill or were obliged to take sick leave, including Surgeon Billings. This hospital was continued in operation until Aug. 2nd.

Assistant Surgeon Howard says the hospital of the Second Division was established on July 2nd at a stone house behind Round Top but next day, just before noon, was removed in great haste to some woods beside a creek, about two miles in the rear. (Rock Creek.)

When the hospitals of the Fifth Corps were reestablished on July 3rd their location was as follows, as noted by an agent of the Sanitary Commission at the time: First Division, on Little's farm, north of the house and south of White's Run. Second Division, south of Mrs. Jesse Clapsaddle's house, across Louzy Run, and one hundred rods south of White's Run. Third Division, one-half mile west of Two Taverns, on Jesse Werley's farm. The three hospitals are said to have sheltered about 1,400 patients. The wounded of the three divisions were: 594, 802 and 181; total, 1,611, including artillery loss.

SIXTH CORPS.

On the night of June 30th the Sixth Corps was on the extreme right of the army, at Manchester, thirty-two miles southeast of Gettysburg. This corps had marched one hundred

miles in four days, but now had a two days' rest. At nine on the evening of the 1st came the order to march, but the column was not under good headway until eleven. Throughout the night and the next day the march was pushed, the tired soldiers urged on by a succession of messengers, wounded coming to the rear, and the growing sounds of battle. In spite of the heat the pace was fast, yet few fell out and those only from actual exhaustion. At five that evening Rock Creek was crossed, and at dark the corps, the largest in the army, was placed in position behind Round Top, having marched thirty-five miles. A brigade was sent to the Fifth Corps and another to the Twelfth, but darkness soon ended the battle. Next day the corps was the reserve of the army and was not heavily engaged, the entire loss being but 27 killed and 185 wounded.

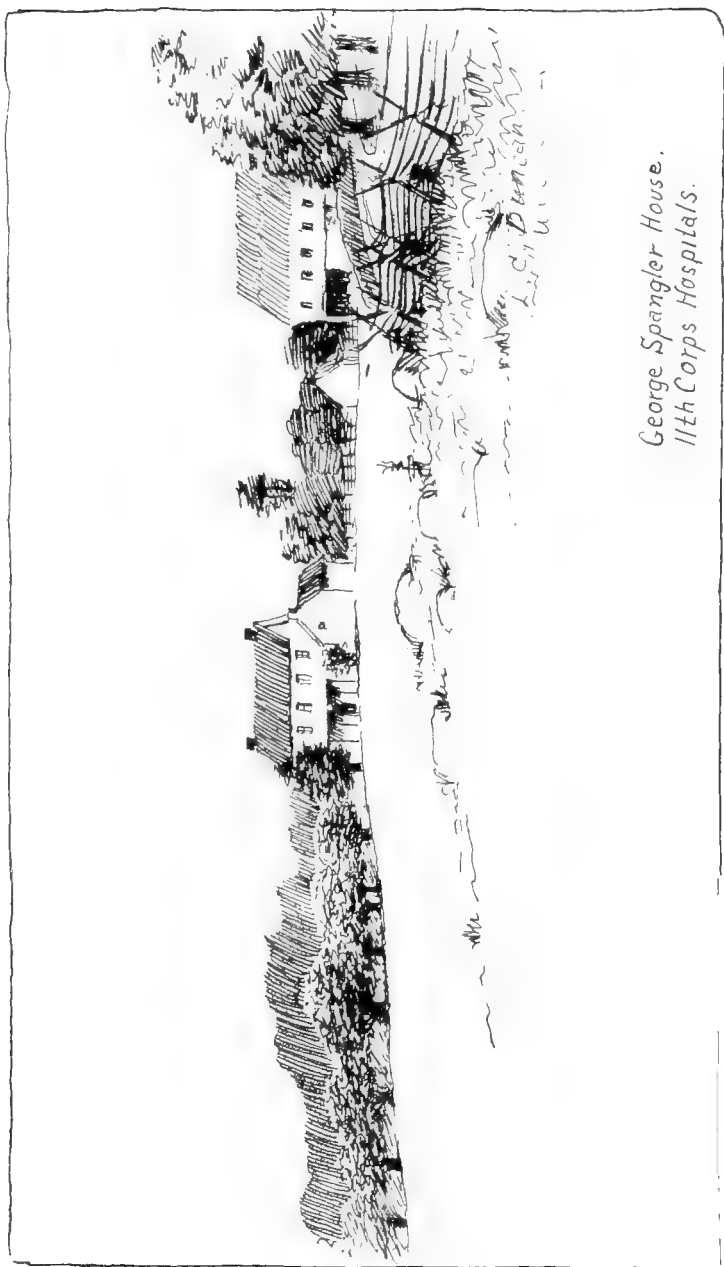
This corps marched to the field by the Baltimore Pike. The medical officers appear to have halted before crossing Rock Creek. The hospitals were established together near the house of John Trostle on the eastern side of Rock Creek, below the mouth of White's Run, and not far from the hospitals of the Third and Fifth Corps. They are said to have cared for about 300 wounded.

Wounded were brought to the hospitals of the Second, Third, Fifth and Sixth Corps by the road running from Little Round Top in a southeasterly direction to Rock Creek.

ELEVENTH CORPS.

On the evening of the 30th the Eleventh Corps was in rear of the First at Emmitsburg. On the morning of the 1st it followed that corps toward Gettysburg. When General Reynolds sent word back to hurry up the troops the First Division continued on the same road, while the Second and Third crossed to the Taneytown Road, so reaching Gettysburg over Cemetery Hill. The First and Third Divisions were pushed out north of the town about one o'clock, the Second was held at the hill as a reserve. By three o'clock the corps had been routed and all not killed or captured were back with the Second Division. The two divisions had been attacked on poor ground and driven back through Gettysburg with considerable loss. During the remainder of the battle the corps had position on the northern and eastern portions of the hill, but was not very heavily engaged. Most of its losses occurred on the first day. The wounded in the three divisions were: 677, 507 and 684; total, 1,922.

The three division hospitals were kept together and were located



George Spangler House,
11th Corps Hospitals.

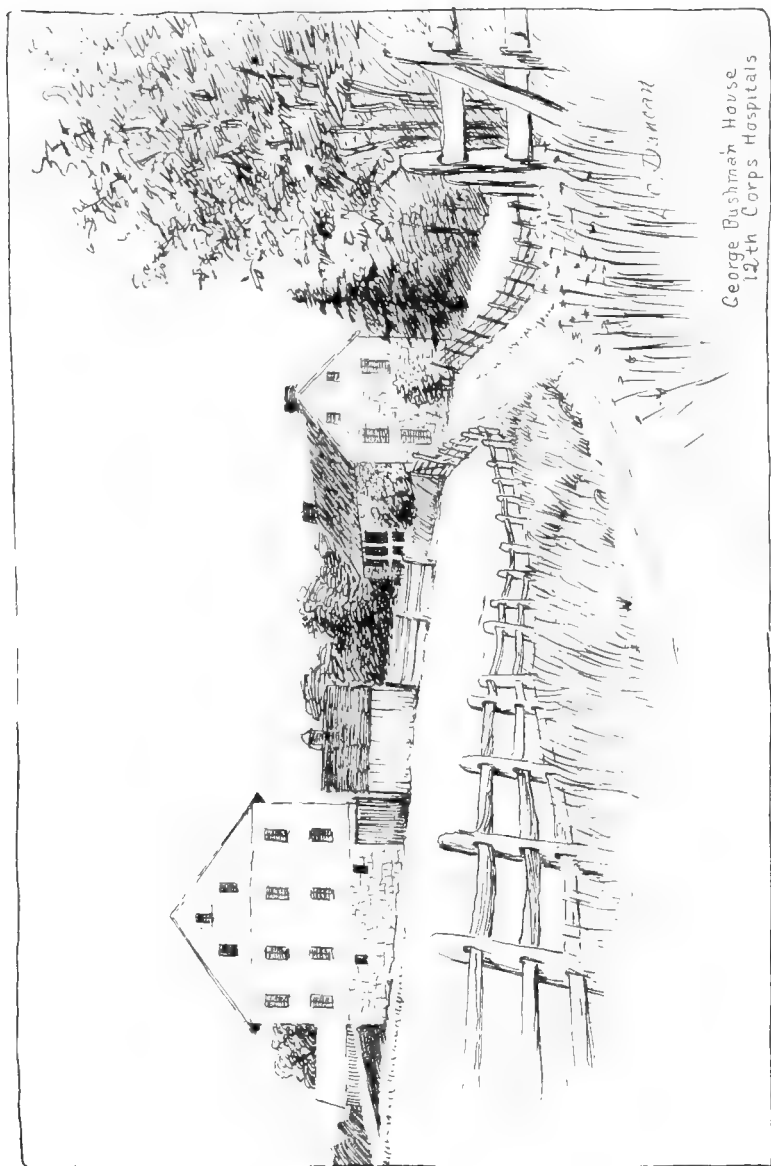
on the first day about the house of George Spangler, south of Powers' Hill. The corps headquarters was at the Powers house near by. This hospital was nearer to the front than any of the others, being less than a mile from the main battle line. It was on lower ground, well sheltered, and convenient to the Baltimore Pike, though off it a short distance. As this corps experienced most of its losses on the first day, when it was driven from the field in rout, many of the wounded were left behind. An agent of the Sanitary Commission reported that the commission cared for more than 1,400 of the wounded of the corps.

In this corps Assistant Surgeon W. S. Moore of the 61st Ohio was severely wounded on July 2nd and died next day. Although thirteen medical officers were wounded during the battle this was the only fatality.

TWELFTH CORPS.

The Twelfth Corps marched to the field by the Baltimore Pike, reaching Rock Creek late on the 1st, after the battle had ended. This corps, consisting of but two divisions, was posted on Culp's Hill, where it was engaged on the evening of the 2nd, and morning of the 3rd. On the 2nd also a large part of the corps was sent to the aid of the left wing. The men of this corps saw hard fighting, but, for some unexplained reason, they constructed better intrenchments than any of the others and had smaller losses. But for leaving their works on the 2nd, and having to retake them again, their losses would have been still less. The First Division had 406 wounded, the Second, 397.

The two division hospitals were separate but near each other. They were around and north of the house of George Bushman, west of Rock Creek, and on a road running south from Powers' Hill to the lower crossing of the creek. There seems to have been a better location for these hospitals on the Baltimore Pike, east of the creek. Such a location would have placed them nearer the corps, and nearer the railhead at Westminster. Their actual location would have been more suitable for the Third or Fifth Corps, which arrived later. It is easy to see how they might have received wounded from other divisions. They are said to have sheltered 1,006 Union and 125 Confederate wounded. These hospitals it will be remembered had retained all their wagons and brought them on the field with their ambulances. Corps Medical Director McNulty said "It is with extreme satisfaction that I can assure you that it enabled me to remove the wounded from



George Bushman House
12th Corps Hospitals

the field, shelter, feed them and dress their wounds, within six hours after the battle ended; and to have every capital operation performed within twenty-four hours after the injury was received." Letterman says the same result would have obtained in all the corps had the supply wagons been up.

CAVALRY DIVISION.

The two brigades of Gamble and Deven, of Buford's Cavalry Division, reached Gettysburg on the afternoon of June 30th, moved out beyond the town, and established pickets on all the roads by which the enemy might arrive. On the morning of the 1st, Gamble was west of the town along Willoughby Run and Deven was covering the roads from Carlisle, Harrisburg and York. The two brigades numbered about 2,200 men.

On reaching the town a hospital had been improvised by the surgeons and some public spirited citizens. Next morning Heth's Skirmishers struck Gamble's dismounted troopers about nine o'clock and some spirited fighting ensued before Reynolds arrived with the infantry. Later in the day Gamble was again engaged on the extreme left. Deven's brigade performed a similar service to the north of town, but with less loss. Gamble had 28 killed and 116 wounded; Deven, 6 killed and 38 wounded. The total number of wounded in what Steele calls the best day's work done by cavalry during the war was 154.

Hospitals for these wounded were established in the Presbyterian Church on Baltimore Street and in two nearby school-houses, in charge of Surgeon Rulinson. When the town was abandoned these hospitals, with those of the infantry corps, fell into the hands of the Confederates. The wounded suffered for care and food until the town was occupied again on the 4th. The Confederates carried away no wounded but attempted to parole them. During the rain after the battle these wounded were in much better plight than those in the various so-called hospitals on the field. The wounded of the other cavalry divisions appear to have been generally cared for in the hospitals of the infantry divisions. Wounded were also cared for at Hanover, Emmitsburg and other points, as a rule by civilian surgeons.

CONFEDERATE FIELD HOSPITALS.

Since the Confederate field hospitals were taken over by the medical department of the army, a brief description of them will be given. The Confederates left about seven thousand wounded

14 *MEDICAL DEPARTMENT IN THE CIVIL WAR.*

on the field, the great majority of them being the worst cases, not fit for such transportation as was available. The total number of wounded prisoners at Gettysburg was 6,802. Of these about 1,800 were in the Union hospitals; the remaining 5,000 had been collected into some sort of improvised field hospitals by their surgeons and ambulance corps. Very few remained on the battlefield uncared for. The largest number in any Union hospital was in that of the Second Corps, which had reaped the harvest of Pickett's charge, and contained nearly one thousand of his men.

The Confederate report, made at the time, put their wounded at 12,706, but it was doubtless greater. Although the medical organization of the Union army was at this time superior, the estimate of wounded was never accurate, being always too low. As the Confederates evacuated the field on the night of the 4th, leaving about 13,000 wounded and unwounded behind, they could not know what prisoners were wounded and what were not. Also at that time their surgeons were forbidden by orders to report slight wounds not preventing duty; this class of wounds averaged from ten to fifteen per cent of the whole. There are other reasons for believing that the number of wounded Confederates equaled that on the other side, 14,491. But the exact number cannot possibly be known.

The Confederate field hospitals were established in houses, barns and dilapidated tents. Their army on this campaign carried practically no tentage, not even shelter tents; so the wounded had little shelter except what could be found on the ground. The rains which followed the battle and continued for several days must have caused much suffering; fortunately the weather was warm. Little was said of how these men were supplied with food during the first few days. Probably there was little to be said. The generals report that they left rations, but there were no rations save what was foraged. A number of men who made this campaign have stated to the writer that they drew five days' rations on starting and not another ration until back in Virginia, nearly one month later. After Antietam, Southern friends in the vicinity brought food to the prisoners in the hospitals, but there were no such friends here. The agents of the Sanitary and Christian Commission were the first to visit and carry food to these hospitals. But for them some of these wounded might actually have perished.

The Sixth Corps followed the Confederates on the Fairfield

(Hagerstown) Road on July 5th. Surgeon Stevens of that corps says:

Every house and barn from Gettysburg to Fairfield was a hospital and about most of the barns numbers of dilapidated tents served to increase the accommodations for wounded. All the worst cases were left in these hospitals. Never had we witnessed such sad scenes as we were passing through. The Confederate surgeons were doing what they could for their wounded, but they were destitute of medicines and surgical appliances, and even food.

J. H. Douglas of the Sanitary Commission said in his report:

It appears that the aggregate wounded was 5,456, occupying some twenty-four different camps. The wounds were in a large proportion of cases very severe; amputations and resections were frequent. The corps of surgeons are as a body intelligent and attentive. The hospitals are in barns, outbuildings and dilapidated tents. Some few cases are in dwellings. I cannot speak favorably of the camp police. Often there is a deplorable want of cleanliness, especially in barns and outbuildings; vermin and putrid matter are disgustingly offensive. As fast as transportation can be had, those capable of being moved will be placed in more comfortable quarters.

As to the camp police, there was no one to attend to it. We may be sure but few able bodied men were left behind. A surgeon who was a prisoner about this time reported on his return that the Confederates had an ambulance and hospital corps, made up of two men from each company, but that these men were either convalescents or men without shoes.

The Confederate army corps and divisions had numbers but those numbers seldom served as designations, as in the Union army. The names of noted commanders were used instead, as Jackson's Corps, Hood's Division or Law's Brigade. The field hospitals may be roughly located by divisions, but appear to have been brigade hospitals grouped together.

Longstreet's Corps. Was on the extreme right of the army, in front of the Round Tops. Hood's Division was on the right, McLaw's next on the north. Pickett did not come up until the third day, and moved from the center.

McLaw's Division. The hospitals were at Bream's Mill, or Mineral Mill, on Marsh Creek, half a mile below the crossing of the Hagerstown Road. McLaw reported that he left 576 wounded, with 10 surgeons, 2 chaplains, and 70 nurses and cooks. The Union records show the number here to have been about 700. Men from other divisions probably made up the difference. Of

these wounded 113 died. The division had 1,538 wounded, including a number of officers. General Barksdale died in a Union hospital; General Semmes was carried away to die. Dr. F. W. Patterson was in charge of this hospital.

Pickett's Division. The hospitals were about the Bream House and Blackhorse Tavern, on Marsh Creek. General Kemper, shot through the breast, was left at Bream's Mill. There were more than 1,200 wounded in this division, the majority of whom were taken prisoners. Generals Garnett and Armistead were killed on the field. Dr. Reeves was in charge of this hospital, which contained 279 wounded.

Pickett's wounded, except those near the opposing lines, lay on the field until late in the night. Lieut. Edward F. Rollins, 15th Massachusetts, Gibbon's Division, speaks of these wounded in the history of the regiment:

About sunset I was detailed to take fifty men and establish a picket line at a rail fence beyond the Emmitsburg Pike, and about midway of the plain over which Pickett had charged. As this line made its way we often stumbled over dead bodies and were exhorted by the wounded, "For God's sake don't step on us," or to give them a drink, or turn them over. Though strict orders had been given to pay no attention to the wounded, with an explanation that the stretcher bearers would follow, still flesh and blood could not refuse these offices. Arriving at the rail fence we saw beyond a pile of dead and wounded, struck as they exposed themselves in clambering over the fence during the charge. From their lines beyond we could hear the sound of chopping and driving stakes; and this was intermingled with groans and shrieks of wounded men around us. At eleven o'clock a detail of surgeons and assistants came out from our lines, giving the wounded, as far as I could learn, not much but morphine.

Hood's Division. The hospitals were on the W Plank farm, about two-thirds of a mile southeast of Blackhorse Tavern, and on the road leading from the Fairfield Road to the peach orchard. They were directly behind the division, as were all those of Longstreet's Corps. There were 1,542 wounded in the division and 515 were left behind. Dr. Mearns was left in charge.

Ewell's Corps. Was on the Confederate left, from the town to Rock Creek, and partly across the creek, and was engaged on all three days.

Early's Division. Early reported but 806 wounded. But little can be learned of the hospitals. The hospitals of the Louis-

iana Brigade (Tigers) was at a stone house 200 yards north of the Chambersburg Pike. General Roy Stone of the Bucktail Brigade was taken there when wounded and captured. The reports of the Sanitary Commission locate Early's hospitals near Blackhorse Tavern, and another report places them at the Myers(?) house. But 259 wounded were left behind, in charge of Dr. Gott.

Johnson's Division. The hospitals were about the W. H. Monfort house, on the Hunterstown Road, about one mile east of Rock Creek. When abandoned they contained 446 of the 1,300 wounded of this division. General Johnson says in his report that fewer wounded were left behind by his division than by any other, which does not appear to be the case. Dr. Whitehead was in charge of this hospital.

Rode's Division. The hospital was at the D. Shriver house, about three miles northwest of Gettysburg, on the Mummasburg Road, and near Willoughby Run. The Union report says that 800 wounded were found there. General Rodes says he left one-half his wounded, which would be 760, with 4 surgeons, 6 assistants, 97 attendants, and 10 days' rations. This division reported (later) 1,728 wounded and 704 missing.

The wounded carried away in wagons were nearly all captured on the night of July 5-6, near Monterey, by Kilpatrick's cavalry. Kilpatrick reported capturing 37 wagons and 15 ambulances loaded with wounded, and several hundred on foot, more than a thousand in all. On July 7th, W. B. Canfield of the Christian Commission visited these hospitals and stated that but one person had been there before him. Dr. Hayes was in charge.

A. P. Hill's Corps. Occupied the center of the Confederate line, from the Seminary nearly to the peach orchard. It was engaged chiefly on the first day, but in part on all three days and had very heavy losses.

Heth's Division. The hospitals were at Pennsylvania College, the Seminary and houses along the Chambersburg Pike. Heth had 1,905 wounded and many missing. About one-half the wounded were left behind. A Philadelphia surgeon who visited the field and made some accurate observations, said there were 853 wounded Confederate soldiers at the College. The Union reports name 693 from Heth's Division. Dr. Frazer was in charge.

Pender's Division. The hospitals were on the Chambersburg Pike, west of Willoughby Run. General Trimble, when wound-

ed, was taken to the house of David Whistler, north of the pike, which makes it appear that this place was the headquarters of the hospitals. General Pender was severely wounded by a shell in the thigh on the 2nd. He was hauled in an ambulance all the way to Staunton, underwent amputation on July 18th, and died next day. The division reported 1,312 wounded, and left 700 behind in charge of Dr. McAden.

Anderson's Division. The hospitals of this division were near the house of Adam Butt, north of the Hagerstown Road, and one-half mile east of Marsh Creek. The division reported 1,128 wounded and 840 missing, many of whom were probably killed or wounded. The wounded from this division seem to have been taken to Fairfield, as but 111 were left in the hospitals on the field. Dr. Miner was in charge.

Fairfield Hospitals. When Fairfield was occupied on the 5th some 871 wounded were found there, in charge of Dr. Ward and Dr. Wilson. These would appear to have been the wounded of the first day's fight, who had been moved back thus far. This is a mere conjecture.

Of the 7,000 wounded left behind, 2,500 were sent to David's Island, New York; 1,100 to Chester, Pa.; a few to Harrisburg, and 1,347 were retained in the Letterman hospital. Several hundred slightly wounded were sent to Baltimore for exchange.

BURIAL OF THE DEAD.

The medical department appears to have had little to do with this unpleasant task during the Civil War. In modern times it is generally accepted that at least a supervision will be exercised by the medical corps, for obvious sanitary reasons. At Gettysburg there were six thousand bodies to be buried. Some few were buried during the conflict, the great majority not until afterwards. Sergeant Thomas Meyer of the 148th Pennsylvania First Brigade, First Division (Second Corps), has related his part in the burial in the Regimental History of that regiment.

The pioneers of the 148th were sent to the field hospital, behind a bluff on Rock Creek, about eleven o'clock on the night of the 2nd. Here several thousand dead and wounded lay side by side in long rows on the bare, wet ground. The feet of one row nearly touched the heads of the next. No lights, no tents, no blankets. The dead were sorted out and buried. Colonel Cross of the 5th New Hampshire was one of them. By the dim light of a few candles the work was done and completed by three o'clock.

They then went to another field hospital, containing twelve hundred wounded, immediately in the rear of the division (First Division, Second Corps), and again began the work of sorting out the dead and burying them. This was completed by morning and these men rejoined their regiment. Sergeant Meyer says one grave was dug and a body placed in it; then another grave was dug along side, the dirt from the second filling the first, and so on.

This was but a small beginning. The real burial did not begin until the 4th, when details were made from each brigade and regiment to clear the ground in their front. The dead were then collected and buried in trenches in all parts of the field. Of the 3,000 Union dead almost one-third were unidentified. This seems a remarkable proportion in view of the place, time, and circumstances.

The dead were buried everywhere. The whole ground around Gettysburg became one vast cemetery: When they could conveniently be brought together, they were buried in clusters of ten, twenty, fifty or more; but so great was the number, and so rapid the decomposition in those who had lain for days in the hot sun, that many could not be removed. In gardens, fields, woods, or by the roadside, wherever found lying, shallow ditches were dug, the bodies placed in them, and covered as hastily as possible. Rose's wheat field, McPherson's farm, and Sherfy's peach orchard were points where the dead lay thickest. One great trench near Rose's garden contained more than four hundred dead Confederates. Many of the single dead merely had a little earth thrown over them. Later these were exposed by the rains.

The Confederates left most of their dead unburied on the field. There was considerable delay in properly interring these bodies. Prisoners were finally impressed into the service, great trenches dug, and by the 5th all were buried save a few in inaccessible places about Plum Run. Some of these were not found for weeks after the battle.

The battlefield was also thickly strewn with the bodies of dead horses. The artillery suffered as in no other battle. The cavalry lost many and hardly a mounted officer but lost his horse. In the Trostle barnyard where Bigelow's Battery was sacrificed they lay thick. In a pool near where Stannard's Brigade stood lay nine dead horses. After the cavalry combat on the Rummel farm Mr. Rummel dragged 30 dead horses from the little lane

leading to his house. It was estimated that between four and five thousand horses were killed. This probably includes the many wounded that had to be shot.

Shortly after the battle, when friends and relatives began to arrive and seek their dead, they were struck with horror by the hasty and imperfect manner of burial. After a short time the opening of graves was forbidden on account of the supposed danger to health. Later Governor Curtin of Pennsylvania led the movement to establish a National Cemetery at Gettysburg. On October 27, 1863, the work of collecting all the Union dead was begun, and completed in March 1864. The contractors reported that they had removed 3,512 bodies and opened more than three thousand Confederate graves in making the necessary identifications. The number removed includes several hundred who died in hospitals from wounds or disease. When the work was finally completed the cemetery contained 3,575 bodies, of which more than 1,000 were unidentified.

The Confederate dead were exhumed shortly after the close of the war and removed to Richmond. But not all were found; no road has been constructed on the battlefield without finding skeletons, and in some cases trenches filled with them have been encountered.

EVACUATION OF THE WOUNDED.

Gettysburg had a railway coming directly into the town, a branch of the Northern Central, from Hanover. This road greatly facilitated the removal of the wounded. For some reason it was decided to remove them to hospitals in the cities, not to leave them near the field as at Antietam. All the wounded were to be taken away except those not fit for transportation. They were mostly evacuated by this branch railway to Hanover Junction, and then to Baltimore and Philadelphia. The railway was poor in the beginning, its destruction by the enemy and temporary repair did not improve it. The rolling stock was scanty and all united in pronouncing the management contemptible. Many inspectors noted that while every other organization in the land was striving to aid the suffering soldiers this road alone remained indifferent.

The bridges were repaired on the 6th and trains came to within a mile of the town. The evacuation of the wounded was begun on the 7th. When Inspector Vollum arrived on the evening of the 8th, 1,462 had already been sent away. He found no system

in use. Letterman had left with the army on the 6th and the evacuation was in charge of a surgeon of the 4th New York. Olmstead says the wounded were brought to the railroad faster than they could be taken away, and were left on the ground, exposed to sun and rain, without attendants. When Vollum arrived he found two thousand poor wretches about to pass the night there without food, shelter or attendants. He notified the Sanitary Commission, which at once furnished beds, tents, a kitchen and nurses. The Commission claimed to have fed every man of the 16,000 that left Gettysburg, to have sheltered 1,200, and to have furnished very many with clothing.

There was much difficulty in moving the wounded from the field hospitals to the railway on account of the lack of ambulances. When the army marched away Letterman directed that six ambulances and four wagons from each corps be left with the hospitals. It appears that but thirty in all were left. For leaving so few ambulances to move 20,000 wounded men Letterman was criticised by one inspector. But he was right; the whole army expected to fight again soon, when all the ambulances would be needed. It is certain that there were not enough ambulances, but it should have been a simpler matter to secure them there than in the field. When Inspector Cuyler arrived he required and received fifty additional ambulances.

From the 7th the evacuation went on as rapidly as the poor road and worse management would allow. Baggage cars bedded with straw were used as a rule. The trains left for Baltimore twice a day—at 10 a. m. and 5 p. m. Ambulances often arrived after the trains had departed, but these patients were cared for by the aid societies. Every train was in charge of a medical officer and telegraphic notice was sent to its destination. Food, dressings, etc., were supplied by the Sanitary Commission, the medical department having none to spare from the field. The U. S. Christian Commission maintained rest stations at Hanover Junction, and at the depot in Baltimore. All the inspectors gave unstinted praise to the work of these commissions. Owing to the irregularity of trains hundreds of wounded often lay part of a day or all night waiting for a train; but for these commissions such men would have suffered greatly.

By July 25th 16,125 wounded had been sent away; 12,000 directly from Gettysburg, 2,000 by Littletown, and 2,000 by way of Westminster. These were sent to Baltimore and from there distributed to the cities further north. Of those sent to Philadel-

phia, six hundred were taken from the trains by friends along the way. The average number removed daily was eight hundred.

There remained at Gettysburg 4,217, the greater part of whom were not fit to be moved. Those considered untransportable at that time were such as suffered with penetrating wounds of the head, chest, abdomen and pelvis; also compound fractures of the thigh, leg and arm. The field hospitals of divisions and corps were gradually closed during July and their remaining wounded collected in one large tent hospital. When the army marched away it was without field hospitals and these establishments were not completely fitted out again until the army reached Rappahannock Station, August 7th. A hospital was maintained at the Seminary for several months but the great evacuation hospital was located east of the town, alongside the York Pike, in the edge of a wood still known as Hospital Wood. It was placed so near the railway that ambulances would be unnecessary in the final evacuation. This hospital was known as Camp Letterman, sometimes as Letterman Hospital. It was opened on July 22nd and not closed until November 20, 1863. By August 1st practically all the remaining wounded had been transferred to it, or to the Seminary.

CAMP LETTERMAN.

This Camp Letterman merits a brief description. It was located within thirty rods of the railway, so that patients could be removed to the cars on litters. It was made up of more than 400 hospital tents, in six double rows, ten feet apart. The tents were supplied with water from wells, were heated with Sibley stoves, but had no bathing facilities except the sponge bath. Ditch latrines were used at some distance from the camp. Each tent held from eight to ten patients, and each medical officer had charge of from forty to seventy patients. Among these patients were 345 with gunshot fractures of the femur. Amputation was performed on 158 of these cases, with 101 deaths. The greater part of the patients were later transferred to other hospitals. On August 30th there were 1,600 patients and on October 18th there were but 326 remaining, of whom 160 were still considered untransportable. This hospital may be said to have had at the beginning the untransportable cases of both armies. This is a larger number of such cases than were ever brought together on any other field. Many such cases had ended in death before the hospital was opened. Cyrus N. Chamberlain, U. S. V.,



medical director of the Fourth Corps, was in command of the Letterman Hospital during the greater part of its existence.

That the authorities at Washington were not devoid of interest in the fate of the wounded is shown by the following telegram:

WAR DEPARTMENT, July 3d.

General H. Haupt, Baltimore.

Spare no effort to send trains to bring in the wounded. If transportation by rail cannot be had, provide it in any other practicable mode.

EDWIN M. STANTON, Secretary of War.

Haupt was then working night and day to reopen the roads destroyed by Ewell. He had the road from Hanover to Harrisburg open in five days, and the branch to Gettysburg in two more.

REMOVAL OF CONFEDERATE WOUNDED.

During the afternoon of the 4th all the spare wagons and ambulances of the army were collected on the Chambersburg and Hagerstown Pikes and loaded with the wounded. Hundreds totally unfit for transportation were placed in these bare wagons. A false point of honor urged them on in track of the army, though to many it meant certain death. The principal train was started at dark in charge of General Imboden, who has related its story in *Battles and Leaders of the Civil War*. A few extracts faintly mirror its horror:

Shortly after noon the very windows of heaven seemed to have opened. The storm increased in fury every moment. Canvas was no protection against it, and the poor wounded, lying upon the hard naked boards of the wagons, were drenched by the cold rain. Horses and mules were blinded and maddened by the storm, and became almost unmanageable. The roar of the wind and water made it almost impossible to communicate orders.

About four o'clock the head of the column was put in motion and began the ascent of the mountain. After dark I set out to gain the advance. The train was seventeen miles long when drawn out on the road. It was moving rapidly and from every wagon issued wails of agony. For hours I galloped along passing to the front, and heard more—it was impossible to see—of the horrors of war than I had witnessed from Bull Run up to that day. In the wagons were men wounded and mutilated in every conceivable way. Some had their legs shattered by a shell or minie ball; some were shot through the body; others had arms torn to shreds; some had received a ball in the face, or a jagged piece of shell had lacerated their heads. Scarcely one in a hun-

dred had received adequate surgical aid. Many had been without food for thirty-six hours. Their ragged, dirty, bloody clothes, all clotted and hardened with blood, were rasping the tender inflamed lips of their gaping wounds. Very few of the wagons had even straw in them, and all were without springs. The road was rough and rocky; the jolting was enough to have killed sound men. From nearly every wagon, as the horses trotted on, cries and shrieks were heard.

Some were praying, others were uttering the most fearful oaths and execrations that despair could wring from them in their agony. Occasionally a wagon was passed from which only low, deep moans and sobs could be heard.

No help could be rendered to any of these sufferers. On, on; we must move on. The storm continued and the darkness grew fearful. There was no time even to fill a canteen of water; for except the drivers, and the guards, disposed in compact bodies every half mile, all were wounded and helpless in that vast train of misery. It was my sad lot to pass the whole distance from the rear to the head of the column, and no language can convey an idea of the horrors of that most horrible of all nights.

After a good deal of harrassing and desultory fighting along the road, nearly the whole train reached Williamsport (on the Potomac), a little after the middle of the next day. The dead were selected from the train, for many had perished by the way, and were decently buried. Straw was obtained on the neighboring farms; the wounded were removed from the wagons and housed; the citizens were all put to cooking, and the army surgeons to dressing wounds.

An officer of the First Corps, then a prisoner, but paroled a few days later, saw this train and said of it: "Yesterday they sent their wounded, filling about five hundred wagons, ambulances, haywagons, etc., piled thick, and followed by crowds so wounded as to be able to walk on the road to Chambersburg. No provision train was sent with them." No one knows how many were in this train. Imboden said "thousands," probably from four to five thousand. It seems there were only ambulances for the wounded officers.

But all the wounded did not go by this train. Most of those of Ewell's Corps were loaded in the division wagons and followed the troops by Fairfield and Hagerstown to Williamsport. Rodes in his report says that about half the wounded of his division (about 800) were left behind; the remainder followed on foot and in wagons and were nearly all captured. This division was in the rear on the night of July 5th, when the army was crossing

the mountains west of Fairfield. Kilpatrick attacked the rear guard, which was insufficient, the Michigan regiments keeping up a running fight all night. Just at daylight, near the top of the mountain at Monteray, the 1st West Virginia broke into the train, shooting or scaring off the drivers, and stampeding the teams with the wagons, many loaded with wounded, down the rough mountain road. All Rodes' wagons were captured, with 1,360 prisoners, mostly wounded. The reports say that 300 wagons and 15 ambulances were captured. The ambulances contained wounded officers, many of the wagons wounded men. Other wounded men were on foot.

On the Chambersburg Road, about the same time, another part of the train was captured, with more than six hundred prisoners, half of whom were wounded. Probably more than 1,500 wounded were captured, beside the numbers left at every town and house along the way. The Richmond papers stated that from six to eight thousand wounded were brought off, but this was only a guess. It seems certain that more than half the wounded were left behind; a thing which never happened to the Army of the Potomac, but possibly occurred at Second Bull Run.

THE SANITARY COMMISSION AT GETTYSBURG.

When the army broke camp on the Rappahannock on June 12th the hospitals were broken up and the nine thousand patients shipped to Washington. The Commission supplied rest and food stations at Aquia, and at the landing in Washington. Its establishment at Falmouth was shipped to that city but a party followed the army with a wagon for each army corps. These wagons were replenished at Fairfax and other points and wagons were daily sent out from Washington to points along the line of march. When the army reached Frederick a storehouse was established there and reserve supplies were accumulated and held in readiness at Harrisburg, Philadelphia and Baltimore. With the first news of the battle Westminster was fixed on as the point of approach and authority obtained from the War Department to ship a car load of supplies daily to that point.

Two wagon loads of supplies were distributed just before the battle. These wagons returned to Frederick and two others fully loaded arrived on the field during Longstreet's attack on the second day. They were pushed forward to the very front and the stores distributed under fire. Dr. McDonald, who was chief field inspector of the Commission, and in general charge during this

campaign, went forward by way of Emmitsburg with a wagon, was captured by cavalry and carried as a prisoner to Richmond. This embarrassed the work of the Commission for a time. However, wagons were secured and the supplies pushed forward from Westminster. A field depot was established in a schoolhouse from which supplies were distributed to all the hospitals. It may be said here that the Sanitary Commission agents did not go through the hospitals with baskets, scattering food and supplies right and left, after the fashion of the citizens generally, but issued their stores to the medical officers, or gave them out by their authority. After the battle began ten wagon loads of their supplies reached the field before any of the regular supplies could be gotten up.

In the first railway train that reached Gettysburg were two carloads of supplies for the Commission, and two more came each day for a week. A storehouse was opened in the town and it was soon overflowing with the abundant outpourings of those at home. Each morning the wagons of the various division hospitals were before the door and each day they went away loaded with such articles as were desired. If articles needed were not on hand they were telegraphed for and arrived by the next train. Tons of ice, mutton, poultry, fish, vegetables, softbread, eggs, butter and other substantial and delicate foods were provided. Thousands of suits of underclothes, blankets, pieces of hospital furniture and utensils were among the supplies furnished by the Commission.

When the railway was completed into the town and the evacuation of the wounded began a camp was established at the depot with 150 beds, a shed kitchen was erected, excellent cooks secured, and a most necessary link in the chain of transportation thus secured. During the first ten days subsequent to the establishment of this station more than five thousand soldiers were fed, and one hundred sheltered each night. The station was continued until all the transportable wounded had been removed and the Letterman Hospital established. A station was then fitted up at that point.

Another most necessary work done by the Commission was in the Confederate hospitals, which were necessarily destitute of almost everything. A special inspector visited all these hospitals and reported on the number of patients, their condition, and the supplies needed. The wounded in them were removed as speedily as possible. In the meantime they were furnished supplies and

assisted as much as possible. The Commission secured the signatures of all the Confederate surgeons left behind to a letter addressed to General Lee, asking the release of Dr. McDonald and those with him who were being held as prisoners of war.

At Gettysburg, as elsewhere, the Sanitary Commission undertook to secure a list of names of all the inmates of hospitals. These lists were forwarded to the central office in Washington, where all inquiries were promptly answered. A special force of workers attended to this division of the work.

Some idea of the amount of supplies sent by the Commission to Gettysburg may be obtained from their statement, which shows stores of all kinds amounting to a total value of \$75,000.

The Christian Commission also had a storehouse in Gettysburg with a small army of aids and helpers. Some 2,500 cases of stores were distributed. As many as a thousand loaves of bread were given out daily, contributed by the neighboring cities of Pennsylvania. This Commission opened feeding stations in Gettysburg and Hanover, and also at Baltimore.

While the primary object of the Christian Commission was to improve the moral and spiritual status of the soldier, it was early recognized that this part of him could be most easily reached through supplying his physical wants. All recognized the value of this Commission in combatting drunkenness; gambling, dissipation and other vices tending to the ruin of the soldier.

CONCLUSION.

The work of caring for such an unprecedented number of wounded was so severe as to break down a number of the surgeons. The labor, anxiety and responsibility placed on them at this time was greater than at any other battle of the war. It must be remembered that these same officers had endured the privations and fatigues of the long, forced marches with the rest of the army; that they had shared its dangers, for one medical officer followed each regiment into battle; that the field hospitals were often established under fire. The battle over, their labor continued. While other officers might rest and renew their strength, the surgeons still toiled on. The work was unending both day and night, the anxiety constant, the strain both mental and physical unceasing. And the recognition was nothing, except the consciousness of duty well done.

In reading the scanty records of the work done by the surgeons at Gettysburg and throughout the war, one cannot escape the feeling of devotion to duty and of patriotism which pervaded

those men. It is well that they had these moral qualities for they received no reward. The medical director of the whole army was and remained a major in rank. As for official recognition by mention or otherwise, it was seldom seen. It is a discouraging thought that even the memory of this devotion and patriotism has all but faded into the obscurity of the past and their names disappeared among men. While hundreds of marble shafts cover the field of Gettysburg, while every combatant organization of the United States Army there engaged has been worthily commemorated, there is neither mark nor stone to indicate that the army had a medical department at that time. But this inexplicable neglect promises to be soon remedied.

Colonel John P. Nicholson of the Battlefield Commission has for a number of years contemplated the erection of suitable tablets. Within the past year, through the efforts of Dr. S. Weir Mitchell and others, this idea has been brought nearer fruition. The Commission now expects to erect bronze tablets, indicating the position of the hospitals and bearing the names of the principal medical officers of corps and divisions. When that is done Gettysburg will be the first battlefield in the world to commemorate those who in battle gave their efforts to save human life.

MEDICAL OFFICERS AT GETTYSBURG.

Medical Director, Army of the Potomac	Surgeon Jonathan Letterman, U. S. A.
Medical Purveyor	Surgeon J. B. Brinton, U. S. A.
Medical Director, First Corps	Surgeon J. T. Heard, U. S. V.
First Division	Surgeon G. W. New, 7th Indiana Inf.
Second Division	Surgeon C. J. Nordquist, 83d N. Y.
Third Division	Surgeon Geo. M. Ramsay, 95th N. Y.
Medical Director, Second Corps	Surgeon A. N. Dougherty, U. S. Vols.
First Division	Surgeon R. C. Stiles, U. S. V.
Second Division	Surgeon J. F. Dwyer, 19th Mass. Inf.
Third Division	Surgeon Isaac Scott, 7th West Va.
Medical Director, Third Corps	Surgeon Thomas Sim, U. S. V.
First Division	Surgeon J. W. Lyman, 57th Penn.
Second Division	Asst. Surg. J. T. Calhoun, U. S. A.
Medical Director, Fifth Corps	Surgeon John J. Milhau, U. S. A.
First Division	Surgeon Edward Shippen, U. S. V.
Second Division	Asst. Surg. Clinton Wagner, U. S. A.
Third Division	Surgeon G. W. Reed, U. S. V.
Medical Director, Sixth Corps	Surgeon Charles O'Leary, U. S. V.
First Division	Surgeon E. F. Taylor, 1st N. J.
Second Division	Surgeon S. J. Allen, 4th Vermont.
Third Division	Surgeon S. A. Holman, 7th Mass. Inf.
Medical Director, Eleventh Corps	Surgeon C. H. F. Campbell, U. S. V.
First Division	Surgeon B. Van Beust, U. S. V.
Second Division	Surgeon D. G. Brinton, U. S. V.
Third Division	Surgeon W. H. Thom, U. S. V.
Medical Director, Twelfth Corps	Surgeon John McNulty, U. S. V.
First Division	Surgeon Alonzo Chapel, U. S. V.
Second Division	Surgeon John E. Herbst, U. S. V.
Medical Director, Cavalry Corps	Surgeon Geo. L. Pancoast, U. S. V.
First Division	Surgeon Abner Hard, 8th Ill. Cav.
Second Division	Surgeon W. W. L. Philipps, U. S. V.
Third Division	Surgeon Henry Capehart, 1st W. Va. Cav.
Medical Director, Artillery Reserve	Surgeon M. J. Asch, U. S. V.
Chief Surgeon all field hospitals	Surgeon Henry Janes, U. S. V.
Chief Surgeon Letterman Hospital	Surgeon C. N. Chamberlain, 10th Mass. Inf.

THE GREAT BATTLE OF THE WEST, CHICKAMAUGA.

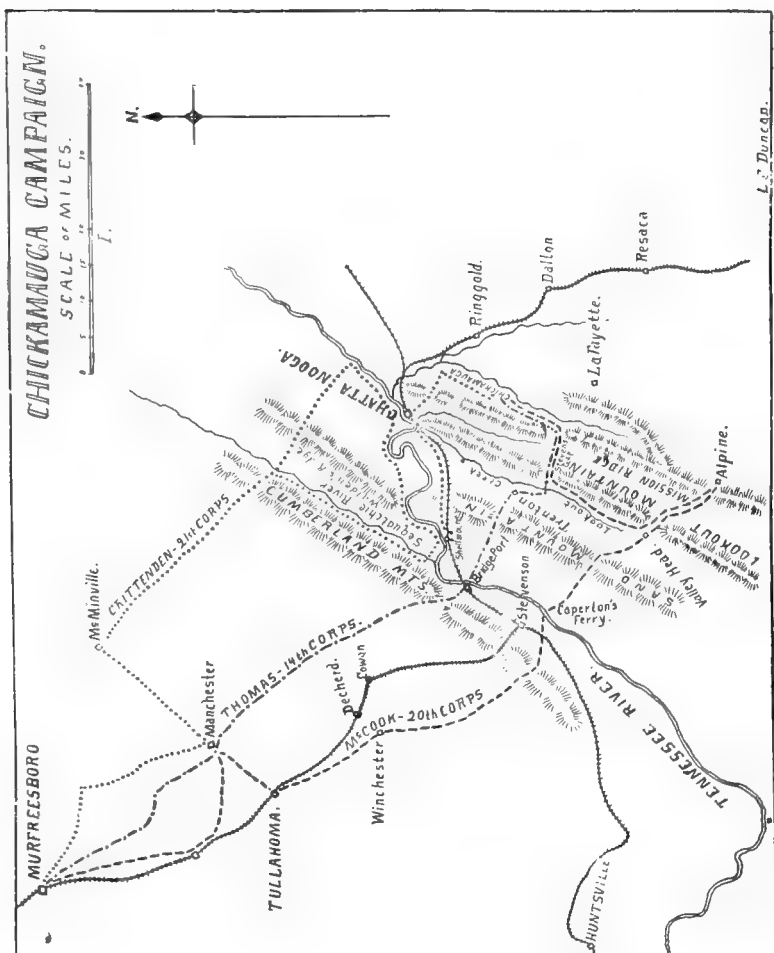
THE battle of Chickamauga was the greatest battle fought in the West. On no other field west of the Alleghenies were the contending forces so numerous, the contest so long and deadly, or the losses so great. Moreover, the conflict took place in a rugged, sparsely settled country, far from bases of supply, under conditions that made the work of the Medical Department extremely difficult. To render bad conditions still worse, the national forces were driven from the field in a manner nearly approaching a rout. Yet the management of the wounded was decidedly better than in the somewhat similar second battle of Bull Run (fought, however, a year earlier), waged by the Army of the Potomac.

THE ARMY.

The contest in the valley of the Chickamauga was waged for the Union by the Army of the Cumberland, the only army of the West that had a separate and continuous existence through the greater part of the war; the only army that may be said to have had a personality like that of the Army of the Potomac in the East. This army had been organized by General Buell at Louisville very early in the war. It had arrived on the field at Shiloh in time to turn defeat into victory; had fought successfully at Luka and Corinth. In the late summer of 1862 it was in front of Chattanooga, almost in the same position as we shall see it now, a year later. Then it had raced across two states with Bragg for the possession of Louisville, and had won the race. After a drawn battle at Perryville it had occupied Nashville again, and on the last day of the year 1862, once more engaged Bragg's Confederate Army at Murfreesboro, or Stone's River. Defeated on the first day, this army had, without help, turned defeat to victory two days later, and occupied Murfreesboro. This brief record is recited to show that in the Chickamauga campaign, General Rosecrans had a veteran army, an army that had marched and fought all over Kentucky and Tennessee for two years with the worst mark against it, a draw at Perryville.

2 MEDICAL DEPARTMENT IN THE CIVIL WAR.

After the exhausting battle at Stone's River, the Army of the Cumberland remained at Murfreesboro for months; resting, re-fitting, and reorganizing for the next campaign. The battle ended January 2, 1863. Despite repeated urging from Washington and favorable contemporaneous campaigns east and west Rosecrans



did not move from his camp until June 24th, thus taking a period of practically six months in preparation for the conquest of Chattanooga.

During this time the army was reorganized into three army

corps, a small reserve corps, and a cavalry corps. Thomas' 14th Corps had four divisions, numbering about 25,000 men; McCook's 20th Corps consisted of three divisions, 12,000 men; Crittenden's 21st Corps also had three divisions amounting to some 14,000 men; Gordon Granger's Reserve Corps was in reality a division of four brigades, about 5,000 men. The Cavalry Corps was made up of two divisions, five brigades, eighteen regiments with three batteries attached, and in round numbers amounted to 10,000 men. The infantry and artillery numbered about 51,000 men, but this number was materially reduced by losses and by the detachments of three brigades before the battle.

There were eleven infantry divisions, with 30 brigades, 122 regiments, and 30 attached batteries actually engaged. The total number of men in these organizations on the days of the battle was, as nearly as can be ascertained, forty-four thousand.

The infantry regiments numbered a little less than 400 men each, the cavalry rather more.

This was the number actually present and equipped for duty, the number of muskets that could be put on the firing line. The muster rolls of these 122 regiments contained twice this number of names.

The Medical Director says that when the Army began the campaign the sick report amounted to about 5% of the command; at the time of the battle it was 4%. But this figure only shows the sick present with the army. About twice this number was in the hospitals in the rear, on sick furlough, or in some way absent sick.

MEDICAL ORGANIZATION AND EQUIPMENT.

The Army of the Cumberland, having been in existence for two years, had time to have and did have an excellent organization and equipment in most respects. Surgeon Hart, who had seen service with both armies, says that the medical arrangements were not on an equality with those of the Army of the Potomac. Possibly not in details. It was operating far from its base, in a difficult country, while the Army of the Potomac was always within a few miles of its base with transportation lines unobstructed.

What was of more importance, the latter army was near the throne—Washington. As General Johnston complained to the

4 MEDICAL DEPARTMENT IN THE CIVIL WAR.

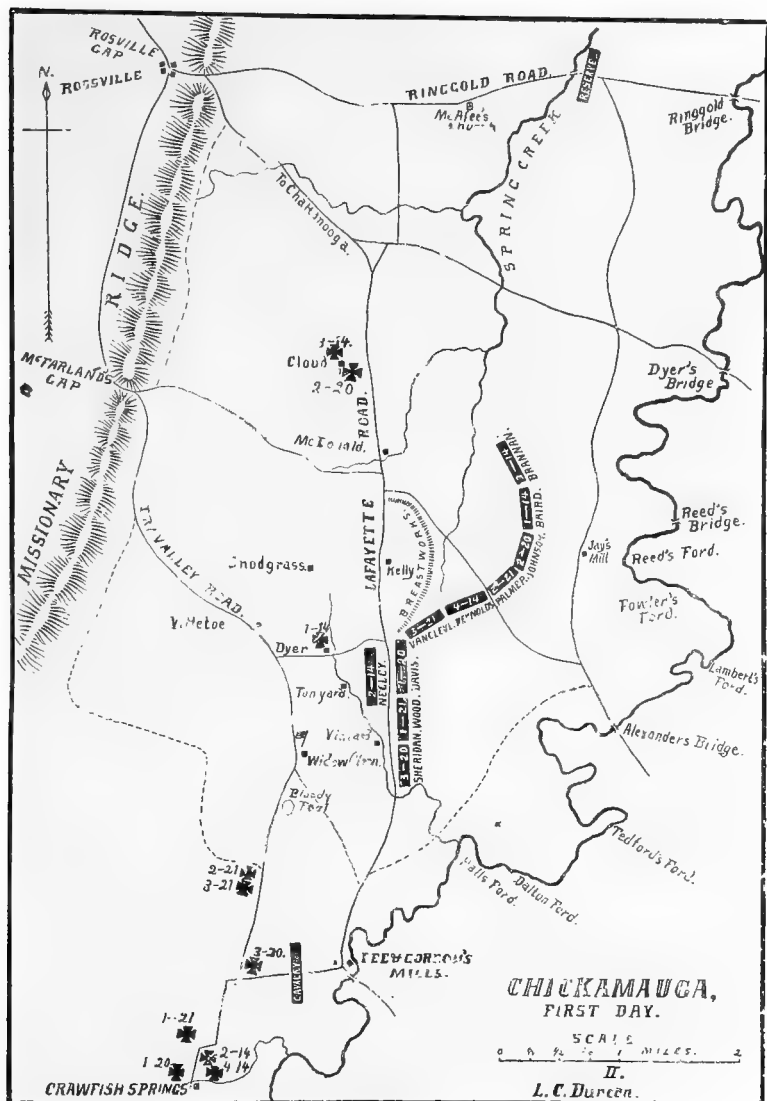
authorities at the Capital, their own danger was most immediate and supplies were readily forthcoming.

The field hospitals were in a transitional state. Each regiment had a hospital; these were combined to form brigade hospitals, in time of battle the brigade hospitals were collected to form what might be called a division hospital. The material was pieced out from the medical supply trains, of which each corps had one. It will be seen that there was a lack of methodical organization and work. There was a sufficient number of medical officers, apparently about three hundred. Although fifty were left on the battlefield there was still no lack. A peculiar thing about the medical officers of this army was that nearly all the division and even corps surgeons were volunteer officers, and as a rule they were surgeons detailed or promoted from state troops. There were less than a half dozen regular medical officers in the whole army.

As to ambulances, the army was abundantly supplied, but the personnel left considerable to be desired. In the beginning of the war the western armies, like the eastern, had regimental ambulances only. Later they were combined in brigades and division trains; in time of battle. Finally in the spring of 1863, division ambulances were provided, but the regimental ambulances were also retained. The Army of the Cumberland at the outset of this campaign was provided with a train of thirty ambulances for each division of from 3,500 to 5,000 men and had in addition thereto one ambulance for each regiment and battery. There was a slight shortage in some of the divisions but the supply as a whole was ample as shown by the following table of forces and ambulances at the time of battle.

14th Army Corps,	20,000 men,	181 ambulances.
20th Army Corps,	11,500 men,	105 ambulances.
21st Army Corps,	12,500 men,	121 ambulances.
Total-----	44,000 men,	407 ambulances.

The ratio is 1 ambulance to each 110 men. The division ambulance trains alone contained 300 ambulances or one to each 145 men. These were all four wheel ambulances, carrying but two recumbent patients. The Medical Director of the Army says in his official report that the regimental ambulances were of little use, being generally loaded with officers' baggage and other articles. It



is easy to see that they could be of little use in any case, being scattered and subject to no efficient systematized control. The ambulance trains were under the general control and management of the Quartermaster Department and had several grave faults. For example there was no ambulance corps. The drivers appear to have been detailed from the line, and as to men for loading and unloading the wounded, there were none; the ambulance drivers had to depend on band men and others whose help was at hand, or were detailed for each particular case. Another serious fault was that the division ambulance trains were not in charge of commissioned officers. For each ten ambulances there was an ambulance master, who seems to have been a sort of wagon boss. The division train was under charge of the division quartermaster. This is one of the things that Surgeon Hart thought inferior to the practice in the Army of the Potomac, as no doubt it was. But this was a minor fault, a detail. The ambulances were combined in division trains, they worked as division units, and they did their work reasonably well.

During the battle they brought wounded off the field as long as they could go on the field, only stopping when in imminent danger of being captured. Even then they were all loaded with wounded and escaped to Chattanooga. There was no panic as at Bull Run, and many ambulances that were cut off and given up as lost made their way through by-roads in the woods and came into Chattanooga in safety.

Wounded were left behind, but chiefly on the field, and because it was abandoned in rout.

Before beginning the campaign the regiments drew medical supplies for three months and Medical Director Perrin says, "Everything that related to preparations in the Medical Department for a vigorous campaign was in readiness and as complete in appointment as could be desired."

The Army of the Cumberland at this time had not adopted Letterman's system of brigade supplies and did not adopt it until Jan. 1, 1864; instead there was a system of regimental and corps supplies. Each regiment had a wagon load of supplies as in the Army of the Potomac before October 1862. This allowance included a hospital tent, and these regimental tents made up the division hospital in time of battle. The regimental supplies were also then drawn on. Unfortunately in one of the corps (the 20th),

these supplies were reduced to 500 lbs. on crossing the Tennessee River and the hospital wagons taken away. This corps suffered as a consequence.

In addition to the regimental supplies there was a reserve supply for each corps, carried in a train of army wagons. The 14th Corps had a reserve supply train of 19 six-mule wagons, the 20th Corps had eleven wagons, and the 21st had fourteen. These trains carried not only medicines and dressings but also food, clothing, blankets, and hospital tents. It will be seen that a train of 11 to 14 wagons for a corps not so large as our modern division, could carry a considerable amount of supplies. In the battle the Medical Purveyor of the 20th Corps was obliged to issue hospital tents to his three divisions and they were all lost.

The base of the army was at Nashville, where there were fixed hospitals of about three thousand beds capacity. Further back, at Louisville and other posts along the Ohio River, there were hospitals with a total capacity of at least twelve thousand patients. At Murfreesboro, the advance base, a large tent hospital of 1,500 beds had been organized and equipped with bedding, cots, etc. This hospital was sufficiently mobile to be advanced along the railway somewhat in the rear of the army. It was later brought up to the Tennessee River and used there at the battle of Chickamauga.

Stevenson and Bridgeport, on account of the peculiar configuration of the terrain, were better situations for hospitals than Chattanooga, so long as the retention of Chattanooga was not absolutely assured.

This hospital was in actuality an evacuation hospital and was so used.

The army had excellent hospital trains operating on the Nashville and Chattanooga Railway. As the army advanced the road was repaired and at the time of the battle of Chickamauga trains were running as far as Bridgeport. The bridge over the Tennessee at that point had been destroyed by the Confederates and was not rebuilt until long after the battle.

THE MARCH.

After repeated urging from Washington Rosecrans finally advanced from Murfreesboro on June 24, 1863. The three corps

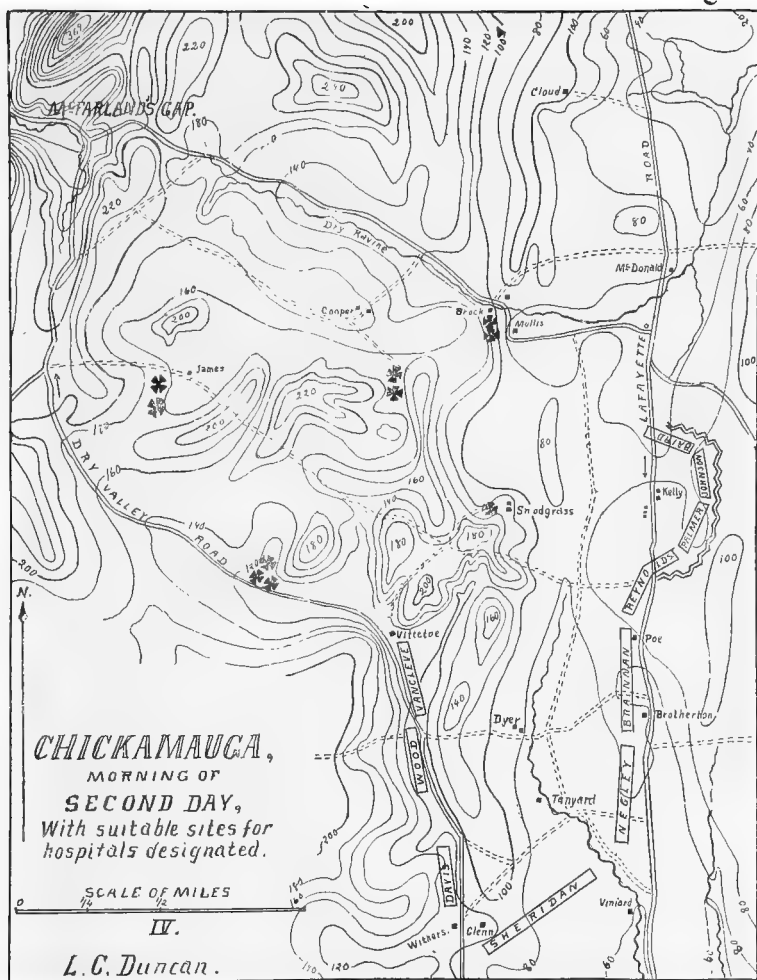
marched by different roads in the general direction of Manchester and Chattanooga. The Confederate Army was in position about Tullahoma and this first phase of the operations is often spoken of as the Tullahoma Campaign. Although when Tullahoma was entered the army rested for several weeks, this was not, properly speaking, a campaign.

The real objective was Chattanooga. The whole series of operations up to Chickamauga consisted of strategic moves for the possession of certain points, rather than an effort to find and destroy Bragg's army.

The whole should be called the Chattanooga campaign, beginning with the advance from Murfreesboro on June 21 and ending with the battle of Missionary Ridge on November 25, five months later.

Shortly after the army commenced its forward movement heavy rains set in, continuing almost without interruption throughout the Tullahoma campaign. The miserable dirt roads leading through the wooded ravines and hills of the barrens of Southeast Tennessee became all but impassable. Wagons stuck fast, the guns could only be moved by doubling teams, and then with the greatest difficulty. Even the movements of the foot troops were materially retarded by the soft glutinous soil in which the soldiers sank half knee deep at every step. The men, soaked and chilled by the rain, suffered terribly, and though the advance was only twelve miles a day the fatigue was greater than in the race for Louisville the year before, when twenty-five and twenty-seven miles were covered day after day.

The rains continued and the roads became even worse as the Cumberland Mountains were reached, but the army pushed steadily forward and entered Tullahoma July 1. There had been a little skirmishing, but no real engagements. The whole loss in killed and wounded was less than six hundred. Despite the continuous downpour of rain and the atrocious roads there had been no more than the ordinary amount of sickness, from 4% to 5%. An accurate observer and careful writer who took part in this campaign says, "During the ten days occupied in marching from Murfreesboro to Winchester, not one passed without a heavy shower and sometimes for twenty-four in succession the rain fell incessantly. The clothing of the men was never thoroughly dry and rations were at all times scanty. Many of



the men wore out their shoes before they had marched three days, and were barefoot the rest of the time. But they kept up their spirits and bore their hardships uncomplainingly."

The sick and the wounded of the first fights (Hoover's Gap, June 24, and Liberty Gap, June 25), about four hundred in number, were sent back to the hospital at Murfreesboro, which had been cleared for them. On reaching Tullahoma a number of tents abandoned by the enemy were used for hospital purposes and a hotel building was converted into another, with a capacity of 100 beds.

Having achieved the first stage of the Chattanooga campaign Rosecrans now sat down at Tullahoma and remained until the Washington authorities again pushed him out—August 17.

McCook's Corps was on the right at Winchester, Thomas in the center at Tullahoma, and Crittenden on the left at Manchester and McMinnville. The Reserve Corps was back along the railway and the cavalry in the front and on the flanks.

Tent hospitals had been established at all these places and one-half of the large hospital at Murfreesboro was brought forward to Cowan, a small station at the foot of the mountains.

On August 5, Rosecrans received a peremptory order to advance and on the 17th his three army corps moved forward on parallel lines toward the Tennessee River. The sick and wounded were all first sent to the rear and the army moved unincumbered. Sheridan's division had already advanced to Stevenson and the remainder of the Murfreesboro hospital was advanced to that point. The army met with little opposition and by August 30 had reached the river. The roads were again all but impassible and the march was slow.

McCook's corps crossed at Caperton's Ferry, Thomas at Bridgeport and Crittenden at Shellmound. By September 4 the whole army was across the river.

The great railway bridge at Bridgeport having been destroyed that point became the rail-head of the column. In addition to the hospital at Stevenson a smaller tent hospital was established there. During all this time the railway hospital train was kept running regularly and all serious cases were removed promptly to Nashville.

The field hospitals and large tent hospitals were kept practically empty, in preparation for expected combat. Supplies were brought

up from the rear for all these hospitals, leaving the reserve supply trains with the various corps intact. At Stevenson and Bridgeport were now what we should call the evacuation hospitals for the final advance on Chattanooga and the battle that was to follow. Up to this time there had been but few casualties, but once south of the river a collision with the enemy was looked for at any time.

The Medical Director says, "I made every effort to familiarize myself with the topographical resources of the country. As a great struggle was anticipated, food for the wounded and an easy way to the rear were the main points to be kept in view." These were the main difficulties that were met with in the East also. It was never medicine or surgical needs that were too great to be met, but simple things like food, blankets, tents, ambulances, and trains. These are the things that almost every medical director and every medical officer found to fail from Bull Run to Appomattox.

The hospitals on the Tennessee River were sufficient for all needs until the army penetrated the gaps of Lookout Mountain. Then Bragg evacuated Chattanooga and the Medical Director ordered Surgeon I. Moses, U. S. V., to proceed from Murfreesboro to Chattanooga and establish a hospital of three thousand beds. Supplies were also ordered forward but events moved too rapidly.

Surgeon Moses reached Chattanooga on September 18, only one day before the battle began. He says, "I repaired to Chattanooga and arrived on Friday, September 18, with orders from Surgeon Perrin, U. S. A., to prepare beds for three thousand wounded. I found scant supplies for not more than 500 beds, and buildings capable of holding that number, built by Confederates and occupied as a hospital, with about 150 sick already in them; also a large building, two stories, built by the Confederates as a receiving hospital, capable of holding 150. These buildings were without doors or windows, and destitute of every convenience. A partial supply of medicines, blankets, furniture, and dressings were on hand estimated for 1,000 men, but deficient in many articles. I selected several buildings which might be converted into hospitals." Various buildings, hotels, lofts, churches, and private buildings were selected and they were all needed before the battle was over.

The shortage of supplies could hardly have been avoided. It would naturally be supposed that on taking Chattanooga Rosecrans would halt there to refit his army, bring up supplies, receive reinforcements and spend some time in preparations before again proceeding deeper into the enemy's country, there to meet an army still unbeaten.

But he seems to have been carried away by his own success, and plunged recklessly into the valleys and mountains below Chattanooga without the preparations that prudence would have dictated. After Grant took command it was nearly six months before Sherman again took up the campaign for Atlanta, and previous to setting out he made careful preparations.

These things are mentioned to show why there were not proper and sufficient supplies and hospitals at Chattanooga, such as one would expect at the advance base of the army, and such as were there in abundance before so bold a leader as Sherman undertook a campaign through the mountains of northern Georgia.

After passing the Tennessee River Rosecrans had several high ridges and deep valleys to cross before reaching Chattanooga: Sand Mountain, Lookout Valley and Lookout Mountain. The ridges were from fifteen hundred to two thousand feet high. Through the main obstacle, Lookout Mountain, there were but three practicable passes for an army: one near the river, Stevens Gap twenty-five miles south, and a third at Valley Head, forty miles south. The three corps marched for these gaps, McCook on the right to Valley Head, Crittenden advanced along the river to Chattanooga. On September 7 the various corps appeared at the eastern outlet of these gaps and next day Bragg evacuated Chattanooga, retiring southward to Lafayette and Dalton. Crittenden entered Chattanooga on the 9th, left a brigade there, and pushed on by Rossville toward Ringgold. The other corps had marched forward and crossed still another ridge, Missionary Ridge, which is not a mountain range, but a long ridge from two to four hundred feet high.

By the 12th Rosecrans found that Bragg was not in retreat as he had supposed, but had his army well concentrated and was advancing down the valley of the Chickamauga, the valley next east from Missionary Ridge. Rosecrans called in his widely separated corps.

The weather had changed and was now extremely dry. The country was almost a wilderness of rocky hills and valleys. The days were warm and the thousands of marching feet ground the soil into a powder that rose in clouds of choking dust. The nights, however, were so cold as to make a fire comfortable.

While Rosecrans was advancing boldly into Georgia, Bragg was calling aid from the whole Confederacy. Divisions were brought from East Tennessee, Mississippi, and a whole corps from Virginia to give him the preponderance in numbers, while Rosecrans, who might easily have been reinforced from Vicksburg, remained with an inadequate force, far from his base, in great danger of defeat and consequent ruin.

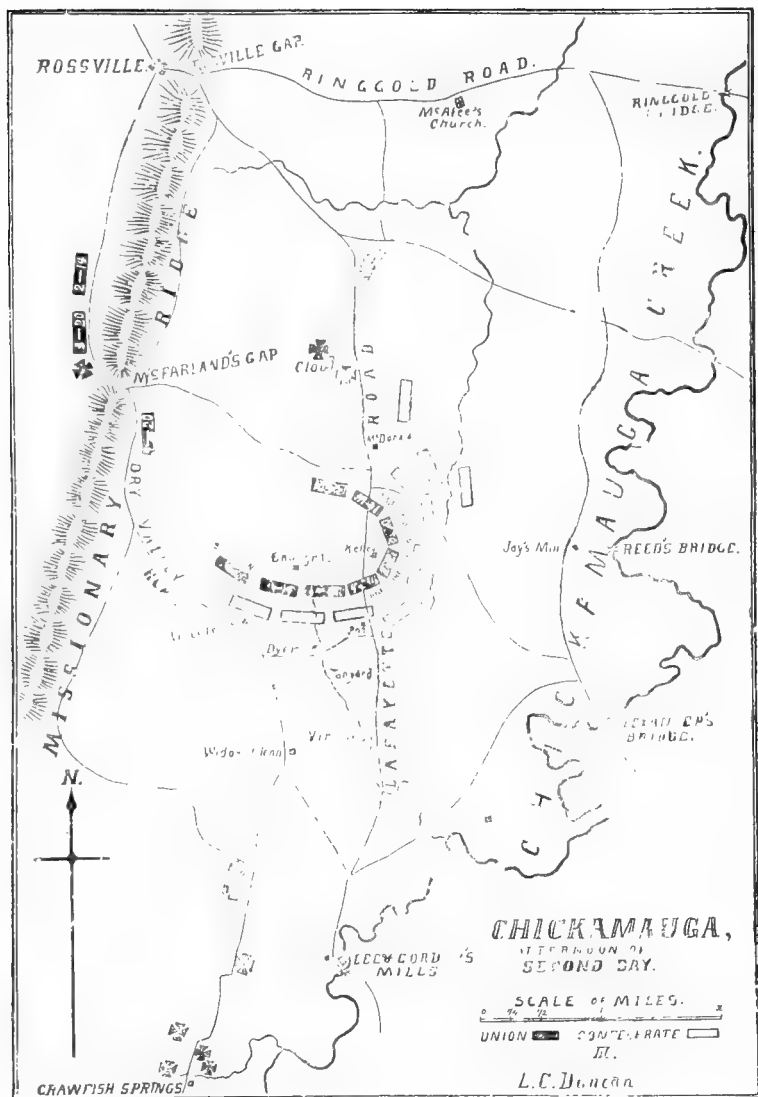
Bragg, now superior in numbers, advanced down the eastern side of Chickamauga Creek, while Rosecrans called in his divisions, to the western side of that stream, in the vicinity of Lee and Gordon's Mills. By the morning of September 18, Bragg's whole force, excepting Longstreet's corps, was ready for battle. On the Union side Crittenden alone was on the field, Thomas was at Pond Spring, and McCook at Stevens Gap, both hurrying up. Gordon Granger was at Rossville Gap, the cavalry in front.

Map II shows the configuration of the battlefield and the lines on the first day of the battle, September 19, but it does not show one very important point, Chattanooga, and its relation to the field.

Now Chattanooga is almost directly north from Rossville, a distance of about six miles. Chattanooga was the temporary advance base of the army. To it the army must inevitably go in case of defeat.

Looking at this map again, one sees without difficulty that the line of retreat must be along the west side of Missionary Ridge from McFarland's Gap to Rossville and on north in the same line to Chattanooga. The army was to fight on a line parallel to its line of communication, with its base on the left flank, a perilous situation at the best.

In case of defeat the whole army must be poured through McFarland's Gap, where the rugged Missionary Ridge would serve as a screen and protection for a safe retreat to Chattanooga. There is but one other gap in this ridge, Rossville Gap, and Gordon Granger's Reserve Corps was posted in front of this vital point to guard it.



The location of Crawfish Springs should also be noted and borne in mind; it is about three and one-half miles from the center of the field, but on the right flank, in the enemy's country, and directly away from the base at Chattanooga.

Rosecrans, Thomas, and McCook came on to the battlefield by way of Crawfish Springs; an ignorant soldier might instinctively feel that he would retreat in the same direction.

Crittenden came to the field from Chattanooga by Rossville Gap, but moved to Lee and Gordon's Mill before the battle.

Medical Director Perrin says, "It was soon discovered that the main body of the enemy was moving down the valley of the Chickamauga towards Rossville. The ridge that divides the valley of the Chickamauga from that of Chattanooga (Mission Ridge) was traversed in several places by wagon roads (McFarland's Gap and Rossville Gap).

It was by these roads that our wounded must be conveyed to the rear. The wagon road down the Chickamauga Valley was nearer the base of the ridge, on the south side (east) where there were few springs. As every indication pointed to a conflict on the north side of the creek, our wounded were to be provided for at these springs, or taken over Missionary Ridge into Chattanooga Valley.

After consultation with the general commanding (Rosecrans) I selected Crawfish Springs as the main depot for wounded. Division hospitals for the 20th and 21st Corps, together with two divisions of the 14th Corps, were accordingly established at that point."

Thus of the ten division hospitals with the army (there is no record of a division hospital with the Reserve Corps) eight were established at or near Crawfish Springs.

One of them, second division, Twentieth Corps, was soon removed to a point on the Lafayette Road, probably near the Cloud House, but seven out of the ten remained there throughout the battle, and afterwards.

There is but one reason for locating these hospitals at this point, the abundance of water. Following the rains of June and July a period of drouth ensued. The roads were dusty, the fields dead, and the streams dried up. The hills back of the army and up to Missionary Ridge were especially destitute of

water. The southern road to McFarland's Gap was known as the Dry Valley Road. A pool near the Widow Glenn House was known as bloody pool. Either side strove for its possession and when the blue or gray was successful the men dropped at the water's edge to drink, though dead men and horses lay in it before their eyes.

In those days water was a prime requisite of the hospitals and dressing stations. Every wound was washed if possible and the simple "water dressing" took the place of our modern first dressing. Then there were the ordinary needs of water for drinking and cooking, always present. For no other good reason could all these field hospitals have been located at Crawfish Springs.

A mere glance at the map shows the line of retreat for all divisions to have converged at McFarland's Gap. From there the road led straight through Rossville to Chattanooga. Everyone in both armies from general down to private knew that Rossville Gap was a vital point.

Yet the trains were parked and seven out of ten field hospitals were established at Crawfish Springs; not only out too far on the flank, but on precisely the wrong flank, and in the enemy's country where in case of defeat they could hardly fail to be cut off.

If on map II one should draw lines from each division to a common center at McFarland's Gap and then mark points on all these lines one and a half to two miles in rear of the divisions he will have the ideal locations for the field hospitals.

In order to conform to topography, roads, and other natural features of the terrain the actual locations would vary from the ideal. But since the army was divided into two wings, each with a road leading back to the gap, it seems clear that the hospitals should have been near these roads, those of the right wing somewhere near the Vittetoe House, where a division hospital was actually located, and those on the left wing back of the Lafayette Road, and north of the Snodgrass House.

The field hospitals located at the Cloud House were too far out on the flank. Flanks were uncomfortable places when Joe Wheeler and Forrest were around.

The various field hospitals were scattered along a line about seven miles in extent, while the actual fighting line occupied not

more than half that distance on the first day and still less on the second; on the last afternoon not more than one mile.

If on map II one should draw a line from each division to its actual hospital he would have a fine crisscross of lines. It would be by accident that any wounded man found a hospital of his own division. Such an arrangement must invariably result in complete confusion for the wounded.

In fact the mixing up of the divisions themselves is generally conceded to have been a principal factor in the loss of the battle.

THE BATTLE: FIRST DAY.

The battle was opened by Thomas, near Jay's Sawmill, at 8:30 Saturday morning. Bragg aimed to attack, but Thomas was first. His corps had marched the whole night steadily and reached the field at daylight. Crittenden had been at Lee and Gordon's Mills and further north for several days. McCook was below Crawfish Springs and hurried forward at the sound of the guns, marching the last five miles at double time. His first division (Wood) was up by noon, Davis got into the fight in time to lose half his division before night, Sheridan only arrived at six o'clock. Gordon Granger took post at McAfee's church and remained there all day. Bragg's divisions were crossing the Chickamauga at all the fords and bridges and advancing steadily to the attack, which was generally met with great firmness. By night, however, the whole Union line was forced back to the Lafayette Road.

The ground was not unlike that of the Wilderness, hills with ragged woods, ravines, and a few cleared fields enclosed with rail fences. The terrain was unknown to the officers, no one could know much of what was going on except in his own immediate front. The fighting was as blind as in the Wilderness, and if anything more deadly. Battle lines advanced through the woods and fired on each other at close range till one or the other gave way. There were few skulkers and no organization refused to advance; or sought the rear, as did happen at the Wilderness. When night came one-fourth of the divisions engaged were killed or wounded. Several regiments lost fifty per cent of their strength.

The actual battle line extended from McDonald's House to a

little below Viniard's. General Rosecrans' headquarters was at the Widow Glenn House. The supply trains were parked at Crawfish Springs, guarded by the Cavalry.

Crittenden's Corps was first on the field. This corps reached Ringgold Bridge on September 12 and was near Lee and Gordons Mill on the 18th. On that day sites were selected for the three division field hospital of the Corps, at a point on the Dry Valley Road a mile and a half north of Crawfish Springs.

This position was directly in rear of the corps at the time, but the battle began further north and continually shifted in that direction. About noon of the first day Medical Director Perrin ordered the hospitals moved farther to the left. The hospitals of the first and second division were packed up and moved to the direct rear of the firing line, presumably near the Widow Glenn House. Before night the medical director of the army ordered them moved back and they were returned to their original site.

It seems that the wounded were mostly brought off the field after nightfall. The first division hospital received four hundred, of which three hundred belonged to the division. This division was on the extreme right and nearest to Crawfish Springs.

The second division hospital reports receiving two hundred wounded and many more during the night.

The third division hospital received about five hundred wounded. They were from various divisions as will be easily understood. The ambulances of all the divisions worked till midnight and brought off practically all the wounded of the first day's battle except those within the enemy's lines. The total number of wounded on this day was estimated at 4,500.

In the first division of this corps a medical officer was placed in charge of the ambulance train of each brigade, thus improving on Letterman's arrangement and anticipating the present plan by forty years.

Thomas' Fourteenth Corps, after marching all night, reached the battlefield early on Saturday morning. Surgeon F. H. Gross, U. S. V., was medical director of this corps. Three divisions of the corps were placed in line on the left, in front of the Kelly Field. The second division, Negley's, was left near Crawfish Springs and later formed part of the right wing.

The hospital of the first division, Baird's, was established at the Dyer House; the best location occupied by any hospital on the

field. The medical director says, "A fine spring, a number of outbuildings, and plenty of straw nearby rendered this a desirable locality for hospital purposes." When the division fell back to the line near the Kelly House, the hospital was in a reasonable distance, and it was on a safe road to McFarland's Gap.

The buildings were first filled with wounded, but by noon it was necessary to pitch tents.

About five o'clock a column of the enemy crossed the Lafayette Road and their shells fell in and around the hospital. The medical director ordered the wounded removed to Crawfish Springs, but the attack was quickly repulsed and the hospital remained where it was. The medical director of this division says, "We received more wounded from Brannan's division (3rd division, 14th Corps) than from our own, as it seems the ambulance drivers of that division were not informed as to the location of their division hospital." The hospital of Brannan's division was away out to the left at the Cloud House. Brannan's division was on the extreme left at the opening of the battle but shortly after noon was moved to the right of the Kelly Field, directly in front of this hospital. This was the best managed as well as the best located of all the hospitals.

The ambulances were kept moving all night and when the field had been cleared they were started evacuating the wounded to Chattanooga. About half were able to march, others were sent in returning supply wagons. By Sunday morning but forty wounded remained in this hospital. It may be presumed that they were non-transportable.

The hospital of the second division, 14th corps, was established near Crawfish Springs. The medical director of the division followed it to the field and thought the hospital should be established in its rear, i. e., near the Dyer House, but he was directed by Medical Director Perrin to go back to Crawfish Springs and establish his hospital there, which he did. His own judgment was better than that of his chief. He remained with the division, gathering the wounded and sending them to the hospital.

The hospital of the third division, Brannan's, was, by direction of General Thomas, established at the Cloud House. The medical director says, "There were good springs, a church, and several houses." The location of this hospital was not so bad as that of those near Crawfish Springs and would have been fairly

good had the army been assured of victory. Many of the wounded, not only of Brannan's, but also of Baird's, Johnson's and other divisions were brought to this hospital.

By nightfall there were nearly a thousand; filling the church, houses, tents; and with hundreds more lying out of doors on the ground. As many of the more severely wounded as possible were dressed and fed with soup.

There was plenty of straw for bedding, but few blankets. Most of the wounded had thrown away or lost their own blankets during the battle.

The night was quite cold. In this hospital, as in others, the wounded were arranged in rows and great fires built at their feet.

The surgeons worked nearly all night, mostly in dressing wounds. Little operating was done. Operating out of doors by candlelight would naturally be avoided if possible.

The hospital of the fourth division of Thomas' corps was also at Crawfish Springs. When the army was driven from the field next day the Medical Director and many of his surgeons remained with the wounded and were captured. These surgeons were retained on the field by the Confederates to care for the wounded prisoners. Later they were taken to Atlanta and paroled. These events appear to have prevented the medical director from making any reports; at least none were made.

The Twentieth Corps, McCook's, did not reach the battlefield until the afternoon of the first day. This corps had a very limited hospital equipment. Before crossing the Tennessee River the medical equipment was ordered reduced to 500 pounds per regiment and was actually reduced to what could be carried on fourteen wagons, about five wagons to a division of 4,000 men. When the corps reached the battlefield one division (Johnson's) was placed on the left with Thomas, in front of the Kelly Field. The other two (Davis' and Sheridan's) were placed on the right, in front of the Widow Glenn house. The hospitals of these two divisions, first and third, were located near Crawfish Springs. The same objection holds against these hospitals as against all the others but with even greater force, since when McCook came on the field the lines were definitely formed and the battle was being waged three to four miles further north. The medical director of the first division says, "I twice selected locations for a division hospital and had to abandon them." He seems to have

been in the rear of his division on the Lafayette Road and near the tanyard. He was directed to move his wounded to Crawfish Springs. He goes on to say, "With the exception of the medicine wagons, the regimental supplies were reduced by general orders (corps order) to 500 pounds to a regiment and this amount put with other baggage and taken with the regimental transportation. These supplies were not accessible when the battle came on and the medical officers had to rely on their knapsacks and such articles as they had in their ambulances. The wagon trains having been subsequently hurried to Chattanooga, the hospital supplies were only obtained when the troops reached that place. I sincerely hope such reduction will not be made again."

First the supplies were reduced to 500 pounds; next the regimental medical wagons were taken away and this 500 pounds loaded wherever it could be piled on a wagon; finally the wagons were sent off to Chattanooga. The corps was left with almost no medical supplies as anyone could have foreseen, yet such a reduction and just such a vicious method of transporting medical supplies is proposed in this year nineteen hundred and twelve.

The wounded of all hospitals near Crawfish Springs were badly commingled and the records were sadly incomplete. The food supply here was a grave question. The medical director quoted above says: "The supply of sanitary goods, beef extracts, tea, and, with five hundred pounds of fresh beef from the division commissary, and some sugar, coffee, and hard bread procured from the cavalry, enabled me to subsist the wounded until the afternoon of the 20th."

The hospital tents had been pitched and were left behind when the place was abandoned next day.

The history of the third division hospital is like that of the first. The medical director says that the wounded in the two days amounted to 1,500, of whom not more than 300 were treated in the hospital.

The second division, 20th Corps (Johnson's), on reaching the field at noon was sent to aid Thomas; the hospital followed and escaped the order to locate at the Springs. The Medical Director says: "I inquired of General Johnson about the propriety of establishing the hospital depot, in which he agreed after a halt a mile further on." The place first selected seems to have been



Hospital at Murfreesborough 1863.

L.C. DUNCAN

well out towards Jay's Sawmill, and the hospital had to be drawn back to another site on the road. I am not able to locate this hospital with precision, but it must have been near the Cloud House.

This hospital had two medical supply wagons. The Medical Director organized the hospital and then went to the front to superintend the removal of the wounded, which was chiefly done at night. He says: "After three o'clock in the morning I went to the front the last time, with four ambulances, and removed all the wounded I could find. The work of dressing went on all night, but operations were left until morning." There was no light for operating, but the operations were never done, for when morning came other events transpired.

Darkness ended the first day's battle. The Army of Cumberland had been outnumbered and had suffered severely, but still maintained its lines covering the roads to Chattanooga. Though hammered mercilessly it was in better condition than after the first day's fight at Stones' River, and even from that wreck had been able to pluck victory.

The loss aggregated more than five thousand and the Medical Director estimated that there were four thousand five hundred wounded. About four thousand of them had been collected by midnight or shortly after. Work in most of the hospitals went on till morning. For the surgeons of Thomas' Corps who had marched all the night before this must have been especially trying.

SECOND DAY'S BATTLE.

During the night and early morning the Union lines were re-tified. The left under Thomas was contracted and a line of breastworks thrown up. This line on the map shows the position of his troops on Sunday morning. The right wing extended from the south end of these works in a southwestern direction to the Widow Glenn House.

This new line was little more than two miles long but it still covered the vital roads. Granger still stood in front of Rossville Gap and the cavalry near Crawfish Springs. The hospitals remained as they were. This is to me inexplicable.

The general was entirely engrossed with a desperate battle. The Medical Director says nothing.

With the contracted lines the hospitals at Crawfish Springs were farther away than ever and in more danger. On the day before they were in the rear of the main line of battle; now they were in front and in great danger of being cut off at any time. The hospitals at the Cloud House were also in the same danger, in slightly less degree. The hospital at the Dyer House was too close to the firing line. That had been demonstrated the previous day and yet no change had been made. However, this hospital was the only one that had a passable location. That of the two on the left was bad; of the seven on the right it could hardly be worse. There were now five divisions on the left and five on the right (see map III). The hospitals on the left should have been northwest of the Snodgrass House within reach of the northern road to McFarland's Gap. Those of the right wing should have been on the Dry Valley Road, from the Vittetoe House west. Some from the center divisions could have been behind the Snodgrass House where there was shelter and a private road to the rear. A line from the Vittetoe House to the Snodgrass House and then north to the Brock House would give the general location of all the hospitals. Today they would all be behind Missionary Ridge.

On account of what looks like an unnecessary and faulty mixing up of divisions it would have been impossible to combine the division hospitals; an excellent custom in the Army of the Potomac. Remember that these corps were smaller than our modern divisions and much less extended when in line of battle.

The second day's battle began about nine o'clock on Sunday morning with an attack on the left, which was kept up till noon, with no great success. However, the Confederate infantry and Forrest's cavalry crossed the Lafayette Road to the north of the line of works and the two field hospitals on this flank were soon cut off from the main line of the army.

On the right all was quiet until midday. Then, during a general shifting of divisions to send aid to the left, Longstreet burst out of the woods with an overpowering column, caught the right divisions moving in flank, and drove them in flight from the field. Davis', Sheridan's and parts of Negley's and Vancleave's divisions were driven in rout back along the Dry Valley Road to McFarland's Gap.

They rallied at the Gap but continued the retreat to Rossville

and took no further part in the battle. Longstreet's forces pushed on for a mile behind the Vittetoe House but then turned to the north to assail Thomas. Wood and Brannan were thrown back at a right angle with Thomas' other divisions along the line of breastworks.

The whole remaining line of battle now made a horseshoe-shaped formation about Snodgrass Hill.

Here Thomas held out through the whole afternoon against almost the whole of the Confederate Army.

Once his extreme right, west of Snodgrass House, was all but turned, when Gordon Granger without orders marched two of his brigades to the sound of the guns and arrived in time to save Thomas from destruction. About five o'clock Thomas withdrew through the two gaps to Rossville, where he was joined by the other divisions and a new line of battle taken up. The Confederates, though victorious, were exhausted, and made no pursuit either that day or the next. On the twenty-second the army fell back to Chattanooga, acknowledging defeat.

When the second day's battle began the hospitals at Crawfish Springs were too far away to be of much use. But there was little or no fighting on the right before noon. At any time during the forenoon the hospitals might have been moved nearer the field and to safer positions. No one seems to have realized that they were as far from the field as was McFarland's Gap, a place of perfect safety. The fate of all these hospitals will be described, beginning on the left, where the battle of Sunday began.

The hospital at the Cloud house (3-14) was cut off early, certainly not later than ten o'clock. Most of the patients of the day before were removed. Sixty of the worst cases were left with most of the tents and supplies. The train of wounded that was started for Chattanooga reached there with the loss of but one ambulance, broken down on the road.

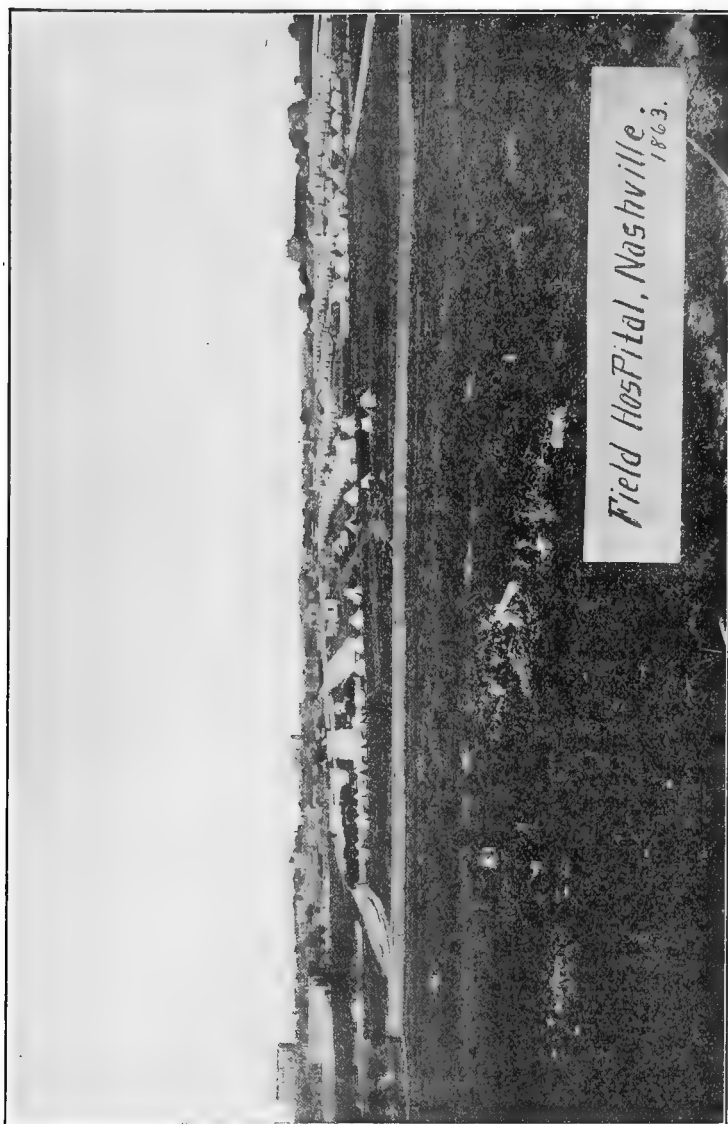
Medical officers were left with the wounded. This hospital was again in the Union lines for a short time in the afternoon when General Granger marched across from McAfee's Church, driving off Forrest's cavalry, but was finally lost that evening when the whole army returned to Rossville. So ends the story of this division hospital. The medical director reported soon afterward that a new outfit would be required before the division could take the field again. Yet he had done very well for his location, in saving

his transportation and most of his wounded. The worst feature of the case was that this division had no field hospital during the remainder of the battle.

The next hospital in line was that of Johnston's division (2-20) also near the Cloud house. At this hospital the work had just begun on the second day when it was cut off like the other. The Medical Director had time to send all the wounded who could walk back to a hill in the rear and removed as many as possible of the others to the same place, by litters and ambulances. The irruption of the gray lines hastened the evacuation. The Medical Director collected his wounded and attempted to return to the hospital, but ran into the opposing lines and was made a prisoner. Granger's march also released him and his hospital temporarily. He resumed the removal of the wounded to the rear until evening when the Confederates took possession of the whole field and he again became prisoner. Next morning he escaped and made his way to Chattanooga. All the wounded had been gotten away except thirty. Four surgeons and a few men were purposely left behind with the wounded and to collect others. The camp and supplies were lost. The wounded on hand were brought off well, but this hospital, like the other, was of little use to its division on the most deadly day of the conflict. Both these hospitals were cut off before ten o'clock. Their position on the road to Rossville had allowed the removal of most of the wounded of the first day's battle; but for the great battle of the second day they were useless.

Let us see what happened on the right flank. The history of all the seven hospitals near Crawfish Springs was much the same. When Longstreet broke through the Union right at noon, all these hospitals were cut off from the army. Fortunately his victorious troops on passing the Vittetoe house turned to the right, and left the trains and hospitals unmolested for a time. They were safely guarded by the cavalry though separated from the main body of the army.

When it was known that the right wing was driven off the field the division surgeons consulted with each other and decided to abandon their hospitals. All wagons of every description, and ambulances, were loaded with all the wounded they could possibly carry; all that could march were sent on ahead and the whole caravan moved by a woods road back to Missionary Ridge



*Field Hospital, Nashville:
1863.*

and then to McFarland's Gap and Chattanooga. The cavalry covered the withdrawal of these wounded and trains very successfully. It appears that they might easily have been captured.

The tents as a rule were left, with a number of the more desperately wounded men. Medical officers, men, and supplies were left at each hospital. The hospital of the fourth division, 14th Corps (Reynolds), was captured entire with its officers. In the two division hospitals of the twentieth corps there were left two hundred and fifty wounded with eleven medical officers and 3,000 rations. The first division lost fourteen ambulances, the third lost one. It will be noted that more wounded were left in the more distant hospitals than in those on the left flank near Chattanooga. The records of all these hospitals were incomplete and in some all records were left behind.

All the division hospitals of the twenty-first corps (Crittenden) were abandoned by two o'clock with about two hundred wounded. Fourteen medical officers were detailed to remain with them. As these hospitals had cared for 1,200 wounded they seem to have done their work well until cut off. They were of no more use to the army, but their own corps had left the field.

The hospitals of the second division brought off nearly four hundred, leaving but forty behind. When the last ambulance left the enemy was within a few hundred yards of the hospital.

The third division brought off all their wounded except sixty, the first division left about one hundred.

We have now seen that by noon of the second day, or a little later, the two hospitals on the left flank and seven on the right had been entirely cut off from the army. But one remains, that of Baird's division (1-14), near the Dyer house, the best located of all. It will be remembered that this hospital was kept clear.

When the attack began on Sunday morning shells fell about the place; by 10 o'clock it was in great danger and was at once evacuated. All the wounded except forty had been sent off during the night. These, with the tents and supplies, were loaded on the wagons and removed to Chattanooga. It was doubtless then thought that the whole battle was lost and the army in retreat.

This was the only division hospital brought off the field entire, due largely to its excellent location and in part to good management.

The army now had not a single available hospital left on the field, and the long desperate battle of the afternoon was yet to come. Map III shows the field at the time with all the hospitals out of reach. When the hospitals were abandoned at least half the medical officers and a considerable number of ambulances remained with the troops. Dressing stations were established and the wounded cared for as well as possible with almost no supplies.

THE RETREAT TO CHATTANOOGA.

When at five in the evening the field was finally abandoned some two thousand five hundred wounded were left to the enemy. Not more than five hundred of these were in the field hospitals; the remainder were in improvised dressing stations, but largely scattered over the field where they fell.

Night found the Army of the Cumberland beaten and sadly depleted but in some kind of a line of battle at Rossville, where it remained all of the next day before falling back to Chattanooga. It was estimated that not more than thirty-five thousand men could be placed in line at that place, so heavy had been the loss.

For the wounded every vehicle was taken and started to the rear; most of them reached Chattanooga Sunday night, but wounded men continued to come in during all of the next day and night. The ambulances were sent back as far as possible to pick up those who were dragging themselves along.

Those able to march did not stop long at Chattanooga, they were sent across the river and continued on their way to Bridgeport. Many of the severe ambulance cases were also sent to the rear. The grave cases were retained in Chattanooga. The general feeling as to the safety of the city at that time was one of serious doubt, and it was desirable to get the wounded to the rear as soon as possible.

The whole number of known wounded at Chickamauga was 9,749; of these about 7,500 reached Chattanooga. Every church, public building, and available house was filled. Many of the inhabitants had left their homes and these houses were seized for the wounded. There was a shortage of supplies at first, but probably no real suffering on that account till later. The medical supply train of the Fourteenth Corps had been brought to the field from Rossville on Sunday morning, but fortunately was

turned back and reached Chattanooga in safety, where the supplies it afforded were extremely welcome. The reserve supply trains of the other corps also seem to have escaped but they had expended most of their supplies in equipping the field hospitals which were lost.

On the twenty-second a tent hospital of fifteen hundred beds was established at Stringers on the north side of the Tennessee River. Surgeon Moses, who, as previously stated, had been placed in charge of the hospitals at Chattanooga, says that about four thousand wounded were placed in extemporized hospitals in the city on the twentieth and twenty-first.

Forty surgeons from the army were on duty in these hospitals, and four Confederate surgeons, attending prisoners.

All the severe cases were dressed the same night that they arrived or the next morning, and all received food, which they had not had for two days. This going without food, although much deplored at the time, was in many cases a great advantage. Not many operations were done on the field, very few in fact, as related by all the surgeons. This also was a blessing in disguise. On occupying the town two hundred bales of cotton were found; they were seized and made up into mattresses, and in ten days there was a mattress for every patient.

The evacuation of wounded began at once. The fear that Chattanooga would have to be abandoned and the growing scarcity of supplies rendered this measure imperative. The wounded were sent across the river, and over forty miles of rough mountain roads to Bridgeport, to their great detriment. Three thousand reached that point on foot, some of whom were malingerers. Within a few days steamers came up to Kelly's Ferry, ten miles below the city, and thereafter the wounded were sent by steamer from that point to the hospitals and trains at Bridgeport. The Confederates had advanced to within a few miles of Chattanooga and held the road leading back to Bridgeport on the south side of the river. By November twenty-fourth, one month later, the number of wounded in the general hospitals at Chattanooga had been reduced to four hundred and fifty.

A week after the battle General Rosecrans made arrangements to recover the wounded left on the field and the medical officers held as prisoners. Many had died and some had been sent south, but seventeen hundred and forty were recovered and brought

into Chattanooga between September twenty-ninth and October second. Four medical officers were also returned. As the Union forces held but fifty wounded Confederates, those recovered were to be counted in future exchanges. This paroling of the wounded seems to have been an exceedingly advantageous thing for the Confederates, who had not the means for caring for their own wounded properly.

A glimpse of the wounded that were sent south is afforded by the report of Surgeon Joseph Jones of the Confederate Service, printed in one of the publications of the United States Sanitary Commission.

These wounded, with their fellow sufferers on the other side, were sent to improvised hospitals in Dalton, Rome, Kingston, Atlanta, Augusta, and other places in Georgia. Surgeon Jones says of the hospitals in Augusta:

"Upon my return to Augusta the Confederate hospitals were found crowded with wounded from the bloody field of Chickamauga. One thousand and fifty sick and wounded soldiers, about nine hundred of whom were recently wounded, were sent from the battlefield to Augusta. The majority of the wounds were slight and of the extremities. The battle was fought September 18-20th and the wounded were not received in Augusta until the 26-28, or from eight to ten days after the reception of the wounds. Not only were these soldiers much crowded in the cars and without proper dressing and attention to their wounds during the tedious journey of near three hundred miles, but many of them lay out in the depot with little or no attention to their wounds for from forty to eighty hours after arriving at Augusta. (These were Confederate wounded.)

"The hospital accommodations were wholly inadequate to the proper treatment of this number of wounded, and they were crowded into houses and churches the hygienic conditions and arrangements of which were defective.

"Thus the Second Georgia Hospital, with a capacity of 165, received 273. The Third Georgia Hospital, with a capacity of 130, received 221 (and so on). The capacity of the Presbyterian Church was only 112, nevertheless 240 wounded were crowded into it; the pews were not removed, the seats were converted into bunks and the wounded men laid in the pews. The capacity of

*United States Army Hospital,
Chattanooga, 1863*



the Catholic Church was only 50, yet it received 130 wounded.

"Hospital gangrene appeared first in the Presbyterian Church, a few days after the crowding of the wounded into it. Not a single wounded soldier escaped hospital gangrene in this building. The disease next appeared in the Catholic Church, and here also the wounded were all attacked. And finally the wounded of the Second and Third Georgia Hospitals were visited and a number of cases terminated fatally." This epidemic of gangrene doubtless began in the dirty box cars that had been used in transporting wounded for months. It was probably spread by the attendants who went from patient to patient with the same sponge.

We have the report of Surgeon Moses that there were five cases of tetanus in the hospitals at Chattanooga, but neither erysipelas nor gangrene. This seems remarkable, but the better class of surgeons during the Civil War clearly understood that gangrene was violently contagious.

They isolated all cases and treated the disease with bromine and the strong mineral acids. Surgeon Jones believed "That hospital gangrene, smallpox, scarlatina, measles and similar diseases are communicated not only by actual contact, but also by the transmission of an effluvium from the original source of infection through the medium of the air."

Let us return to Chattanooga.

Bragg advanced to a position on Mission Ridge and Lookout Mountain and blockaded the city. Wheeler got in the rear and played havoc with the supply trains running back to Bridgeport. The Autumn rains came and the roads became all but impassable. Rations grew scarcer and scarcer. The troops were all put on half rations, and even those sometimes failed. Surgeon John Moore says that for several days corn in the ear was issued as bread rations.

Medical Director Perrin's report pictures the conditions at this time. "As the roads became more and more difficult by reason of the rains, only those subsistence stores that were absolutely essential could be brought up, and even those were soon reduced in quantity far below the standard ration. The country on the north side of the river had been gleaned of everything in the way of vegetables. Every effort was made to secure for the wounded enough food from the regular ration, including soft bread; but in the absence of vegetables and other delicacies they

exhibited but too plainly the sad evidences of deficient nutrition. A want of fuel was also felt during the latter part of October and November. It was very discouraging to the medical attendants to witness the gradual but certain decline of patients who should have recovered, while they felt themselves powerless to apply the proper remedy."

Toward the latter part of October about fifteen hundred sick and wounded were in the hospitals at Chattanooga. Starvation had reduced the animals to such a point that no ambulance transportation could be organized; there were not even horses for the guns. Things looked very dark when Grant arrived and reinforcements began to come in. Then the aspect changed. Hooker opened up the cracker line to Bridgeport, supplies were brought up in great quantities, and the wounded evacuated to the rear.

This line was opened on October twenty-eighth. The wounded were all sent north except some two hundred of the gravest cases, not suitable for transportation. The hospital across the river was broken up, more permanent hospitals established in Chattanooga, and preparations made for the next battle, which was now at hand. But that is another story.

The events of Chickamauga have been narrated; much more could be written, for the reports are usually full and complete, more so than for any other of the great battles of the war. I hope that enough has been set down to give a tolerable idea of the various elements and phases of this great battle, as seen from the point of view of a medical officer.

LOSSES.

The losses at Chickamauga were, I believe, more severe in proportion to the numbers engaged than in any other of the great battles of the War. This battle is unique also in that the Confederate loss in killed and wounded was decidedly greater than that of the Union forces, being over sixteen thousand Confederates to less than twelve thousand Union. This was due to the facts that the Confederates had more troops on the field and that they were the attacking party, the other side fighting on the defensive, and largely under some kind of cover.

The loss in the infantry was one-fourth of those engaged. And there were no reserves held back as at Antietam; save for one

brigade of Granger's Corps every brigade and regiment on the field was engaged, and the losses of many were remarkable. Steedman's reserve division in three hours lost 1,787 out of 3,900. The regular brigade of Baird's Division, fighting desperately on both days, lost seventy-five per cent of its strength in killed and wounded. Brannan's Division, fighting mostly without cover, lost 1,977 in killed and wounded and had but 214 missing. Many regiments lost half their strength. The Eighth Kansas, for example, lost fifty-five per cent in killed and wounded, practically all on the afternoon of the first day's fight.

The cavalry loss as usual was small; forty killed and one hundred and twenty wounded; total, one hundred and sixty, out of ten thousand present; or about one and six-tenths per cent.

The ratio of killed to wounded is given as one to six. This indicates that many reported as missing were either killed or mortally wounded, which was undoubtedly the case. The killed probably numbered over two thousand; the wounded amounted to nine thousand eight hundred. The total of killed and wounded in the two days at Chickamauga amounted to about four-fifths of the killed and wounded in the two days' battle in the Wilderness, where the infantry and artillery engaged were quite twice as numerous.

Most of the medical officers making reports commented on the slight nature of the wounds. This was partly due to the fact that the gravely wounded of necessity remained on the field. Yet the wounds as a whole were probably not so grave as in many other battles, for the reason that in the wilderness of Chickamauga the Confederates were not able to make much use of their artillery. In reading the memoirs of surgeons of the war one is continually impressed with the gravity of shell wounds. These were the wounds that baffled, even terrified the surgeon; the wounds from which he turned away in despair.

COMMENTS.

Before criticizing the work of the Medical Department in this campaign it is only just to consider the words of the Medical Director, Surgeon Grover Perrin, U. S. Army.

"When it is remembered that the Battle of Chickamauga was fought at a long distance from the base of supplies, in a region

already gleaned of resources and difficult of access, that it was lost, and that the army was subsequently cooped up with but one outlet by a circuitous and difficult route of fifty miles in length, it may be safely asserted that the obstacles to be overcome in the successful care and treatment of the wounded were more formidable in this than in any other of the great battles of the war. An indulgent criticism may therefore be fairly claimed when viewing the results of treatment." He might have named other adverse conditions; the army was deep in the enemy's country; Nashville, the advance base, was one hundred and fifty miles to the rear, while the real base was on the Ohio River, three hundred and thirty-six miles away. This distance was traversed in the greater part by a single line of railway, every mile of which was at all times subject to sudden interruption by raids of Confederate cavalry. The worst factor of all was that the battle was lost.

Sudden evacuation of the field must always lead to confusion, with consequent suffering of the wounded. These facts should tend to leniency in condemning those responsible, they should not affect judgment as to faults.

Assistant Surgeon Samuel Hart, U. S. V., who was on duty with the regular brigade and had served in the Army of the Potomac, says in his report: "The hospitals had been established at inconvenient distances, particularly for the left wing. I am of the opinion that a less number of primary operations were performed than after any engagement I have ever witnessed; and that the facilities here are not equal to those of the Army of the Potomac for the prompt and efficient care of the wounded."

This criticism is eminently just, though the absence of operations was probably a blessing to the wounded.

The combination of regimental supplies and corps supplies was faulty; the combination of regimental hospitals to form brigade hospitals, and of those to form division hospitals, was more so. The ambulance organization was one of the best features of the medical service; and it had faults, as the lack of officers, and of a permanent enlisted personnel.

Excellent hospital railway trains were in use and temporary (evacuation) hospitals were organized along the railway as the army advanced. It appears, however, that the personnel for these

hospitals was mostly taken from the marching force, instead of being supplied from the rear as it should have been.

The peculiar geographical situation of Chattanooga and the roundabout route by which its only northern railway entered the city made it a very difficult place to supply or from which to evacuate wounded.

After the successful campaign for possession of the city the army should have halted there and spent some time in consolidating its conquest, in bringing up a reserve of supplies, refitting, and planning for the future, both front and rear. Rosecrans halted for months at Murfreesboro and Tullahoma, places of no importance, but did not delay a single day at Chattanooga.

The location of the hospitals was the glaring fault of the medical service in this battle. It was at first thought that Bragg would attack further up stream, near Lee and Gordon's Mills, consequently the hospitals were established at Crawfish Springs, not a very bad location, though the leaders seem to have not been accurately oriented. But when Bragg moved further down the stream the army drew farther and farther away from the hospitals. When the battle began seven out of ten of them were from three to five miles away, not to the rear but on the extreme right flank of the army. There was time for a change during the forenoon of the first day when there was but little fighting on the right, or during the night, or again during the forenoon of Sunday when the right wing was but little engaged.

The location of these hospitals was faulty for the following reasons :

I. Too many were grouped together, they should have been in at least two groups and near their respective corps.

II. They were too far from the line of battle for that period.

III. They were out on a flank, and on the most exposed flank. If on any flank they should have been on the left, toward the base, not on the right, toward the enemy.

IV. Every patient taken to Crawfish Springs had to be hauled on an average three miles to reach that point; then the same distance back on the way to Chattanooga; thus being moved a distance of six miles to no advantage, but often with much injury to his wounds. The idea of hauling wounded men six miles further than necessary during a great battle is an outrageous one.

The time required to haul these patients to Crawfish Springs would have sufficed to remove them through McFarland's Gap, to a perfectly safe location, and one five miles nearer Chattanooga.

The hospitals located at Crawfish Springs on the Eighteenth should have been moved during the battle. Those of the Twentieth Corps should never have been placed there at all. When this corps arrived on the field the lines of battle were drawn and the roads to the rear clear and plain.

Once located all the hospitals seem to have been fixed and immovable, though the battle drew farther and farther away and the danger of being cut off grew more and more grave. When they were finally cut off at noon of the second day all of the tentage and other material was of necessity abandoned. This was not so serious a thing, however, as the fact that these seven hospitals were of no use to the army on the second day. Had they been back toward McFarland's Gap, where they should have been, they could have been kept cleared or nearly so; then when the disaster came at least a part of them could have been saved. Some of them should have been in the rear of Snodgrass Hill, where they would have been available until the whole field was abandoned.

The hospitals on the left, near the Cloud House, were also badly located, though not so badly as those on the right. They were six miles nearer to Chattanooga and were protected to some extent by Gordon Granger's Reserve Corps. General Thomas, who seems to have acted with a large degree of independence, located these hospitals; or his medical director located them with his consent. When, on the night of the Nineteenth, Thomas took the position along the line of breastworks, these hospitals were left in an extension of that line. They should have been moved further back.

Owing to their location on a direct and short road to Chattanooga these hospitals were able to evacuate their wounded promptly, so that when they were abandoned very few were left behind. But they were cut off by noon on Sunday and afforded practically no service to the army on the second day.

The last, and best located of all the hospitals, was another of Thomas' Corps, that of Baird's (First) Division. This hospital

was admirably located for the first day's battle and was kept cleared of wounded. But when the lines were rearranged that night the hospital should have been moved further to the rear, somewhere behind the Vittetoe House. Warning had been given by shells falling around it the previous day. When the Confederate advance was made next day it was at once in danger, but owing to its good location and excellent management was able to escape entire in patients and material, the only hospital on the field that did so.

It should be said that the medical directors of Thomas' divisions knew that Crawfish Springs was an improper location for the hospitals.

Medical Director Marks of the First Division located his hospital at the Dyer House as just related. Medical Director Bogue of the Second Division says he was proceeding with the wagons and ambulances from Lee and Gordon's Mills toward the left, thinking the hospitals would be located there, when he was ordered to return to Crawfish Springs.

Medical Director Tollman of the Third Division located his hospital at the Cloud House. Medical Director Herrick of the Fourth Division, after his hospital had been located at the Springs, attempted to move it toward the left, but was prevented by the movement of troops and firing of the enemy. The independence of action and good judgment shown by General Thomas appear to have extended throughout his corps.

The fact that the army was practically without hospitals on the second day, while two-thirds of the troops remained on the field and more than half the casualties occurred, is the strongest indictment that can be made against the location of the field hospitals.

The evacuation of wounded from the three hospitals on the center and left appears to have begun early and to have been kept up, so that when these hospitals were abandoned not more than a hundred wounded remained in them. From the hospitals on the right the long distance to Chattanooga made the evacuation more difficult and it was not so well done; when these hospitals were abandoned several hundred wounded were left behind. At the present day some hospitals would be held in reserve at Rossville.

The care of the wounded after reaching Chattanooga was as

good as could be expected under the adverse conditions prevailing at the time. Their prompt evacuation and the establishment of outdoor hospital in tents and arbors were excellent measures that doubtless saved lives that would otherwise have been lost in the blockade that followed.

MEDICAL OFFICERS, ARMY OF THE CUMBERLAND, AT CHICKAMAUGA.

Medical Director of the Army,

Surgeon Glover Perrin, U. S. Army.

Assistant Medical Director,

Assistant Surgeon Dallas Bache, U. S. Army.

Medical Inspector,

Surgeon H. H. Seys, 15th Ohio Vols.

Medical Purveyor,

Surgeon Robert Fletcher, 1st Ohio Vols.

Medical Director, Fourteenth Army Corps,

Surgeon F. H. Gross, U. S. Vols.

First Division,

Surgeon S. Marks, 10th Wisconsin Vols.

Second Division,

Surgeon R. G. Bogue, 19th Illinois Vols.

Third Division,

Surgeon M. C. Tollman, 2d Minnesota Vols.

Fourth Division,

Surgeon O. Q. Herrick, 34th Illinois Vols.

Medical Director, Twentieth Army Corps,

Surgeon Jabez Perkins, 10th Kentucky Vols.

First Division,

Surgeon L. D. Waterman, 39th Indiana Vols.

Second Division,

Surgeon Charles Schussler, 6th Indiana Vols.

Third Division,

Surgeon D. J. Griffiths, 2d Kentucky Vols.

Medical Director, Twenty-first Army Corps,

Surgeon A. J. Phelps, U. S. Vols.

First Division,

Surgeon W. W. Blair, 58th Indiana Vols.

Second Division,

Surgeon S. G. Menzies, 1st Kentucky Vols.

Third Division,

Surgeon S. D. Turney, U. S. Vols.

Medical Director, Cavalry Corps,

Surgeon L. A. James, 4th Ohio Cavalry.

THE BATTLE OF THE WILDERNESS.

BURKE was wont to condemn the proneness with which men when confronted with a difficult problem, consult their own invention rather than the experience of the past. Rightly considered, both are extremely useful and together they are the principal factors in progress.

By studying the past history of any line of human action, we learn what measures were successful, and, just as important, what failed.

Invention adapts successful measures to present conditions, and, when experience fails, discovers new ones, to be in turn submitted to the test of experience.

The history of the Medical Department of the United States Army during our great Civil War is particularly rich and valuable in experience that may be applied to the tactical problems of sanitary troops today. It may be safely said that sanitary tactics of the battlefield did not exist in the period immediately preceding the war.

A steady evolution in this work progressed, from the pitiful absence of provisions for the wounded at Bull Run, to the splendid organization and work of the Medical Department in the great closing campaigns of the war. The system of caring for the wounded, devised by Letterman and carried out by McParlin and others, was the basis of all systems now in use in the great armies of the world. More than that, and contrary to the common opinion, this system was developed by the spring of 1864 to a point which left little to be desired, and which more modern devices have not materially changed. The ambulance and field hospital organization that crossed the Rapidan with Grant's Army was in all essential features the ambulance and field hospital organization that would take the field in the event of war tomorrow; and we shall be extremely fortunate if we have an equipment even approaching that of the Army of the Potomac at that time. We did not have anything like it in 1898.

GENERAL SITUATION.

During the last days of April, 1864, General Grant had the Army of the Potomac collected about Culpepper, facing the Rappahannock River, across which in intrenched lines lay the still formidable Army of Northern Virginia. Grant had three Infantry Corps; the Second, Fifth, and Sixth; numbering with the artillery about 73,000 men. The Cavalry Corps of 12,000, and the Ninth Corps of 19,000, which came up later but took little part in the conflict, will not be given more than a brief notice.

A study of the sanitary tactics of the battle is much simplified by considering only the three corps that really did the work.

They consisted of eleven divisions, (the Sixth having but three) thirty-two brigades, about 180 regiments. A regiment consisted of rather less than 400 men, a division of about 7,000. Lee had about 20,000 less. Grant's objective was a position between Lee's army and Richmond. So the Army was shifted to the left and pushed across the river into the Wilderness; without opposition by Lee. But no man of all that great army doubted that most desperate fighting would come, and soon.

The Army had never crossed that river line except to face a line of fire, and now it was lead or driven on by a silent, determined man whom no death list staggered, no check halted for long. Death waited in the Wilderness but the Army must go on.

To prepare it for this last grapple with the Confederacy all had been done that human foresight could devise; the only fault to be found with the equipment was that it was excessive. So it was reduced to a minimum; practically all tentage and baggage were cast aside.

Ammunition wagons, light hospitals, and ambulances alone followed the divisions across the fords at midnight on May 3d, 1864. The bloody battle of the Wilderness was to be accompanied by the best care of the wounded that the world had ever seen.

When the Army of the Potomac crossed the Rappahannock its medical equipment was complete. Every corps had its ambulance company and every division had its field hospital. That they met the demands of the terrible days to come proves their sufficiency. The Ambulance Corps of the Army on May 1st numbered 60 officers and 2,300 men. For transportation there were 609 ambu-

lances and 266 army wagons ; with 3,295 draft animals. All these were in excess of the regulation allowance.

For shelter there were 294 hospital tents, holding eight patients each or 2,300 patients.

Deducting the ambulances of the Cavalry Corps, it appears that more than 500 ambulances crossed the river with the Army. A little calculation shows that there was one ambulance for each 150 men.

Of these one-half followed the divisions, the other half remained with the supply trains but was always within reach. But those with the troops afforded one for 300 men while our present allowance is but one to 400 men. Letterman's regulations allowed three ambulances to a regiment, of 500 men or more. General Sherman on the march to Atlanta, although ordering every tent and trunk thrown out, allowed two ambulances to a regiment (very small), and General Meigs quotes Grant as estimating 180 ambulances for a corps of 32,000 men. The Army also had an excellent field hospital equipment which will be described in detail later.

The total number of medical officers on May first was 699. All these numbers refer to officers and men actually present for duty, and to serviceable transportation. Four hundred and thirty-three medical officers crossed the river with the infantry columns ; add to these the sixty officers of the ambulance corps and there is one sanitary officer for each 150 men.

I. ORGANIZATION OF THE MEDICAL DEPARTMENT.

Regimental Organization.

At the beginning of the war there was no care of the wounded except that afforded by regimental surgeons, ambulances, tents, and supplies. The volunteers clung to their idea of regimental hospitals and only gave them up after years of effort, orders, and finally law.

Gradually they gave up their hospitals, ambulances and supplies.

The last surrender took place in the Army of the Potomac when it was stripped for the final campaign to Richmond. The

Rapidan was a Rubicon to regimental hospitals as well as to some other institutions.

Each regiment had by law a surgeon and an assistant surgeon.

Before an engagement these officers were drawn on to man the field hospital, which had no complete permanent personnel. The brigade surgeons were also detailed for this purpose. However, one surgeon was required to remain with the regiment and these surgeons formed the first line of aid. They gathered at sheltered spots behind the firing line, by brigades in the latter years of the war, and formed aid, dressing, and ambulance stations, all in one. This single station was no doubt suitable for the days of short range guns. These stations were from 300 to 500 yards behind the firing line, at points that were under cover and could be reached by ambulances. Supplies were obtained from the medical knapsacks of the regiments, and from the ambulances coming to the stations. Regimental assistance had diminished to first aid and partial collection of the wounded; but the ambulance corps did most of the latter. But all the first aid given was that of the regimental personnel; the ambulance corps was in reality a quartermaster organization, under the direction of the Medical Director of the Division.

Ambulance Corps Organization.

The Letterman order of August 2nd, 1862, made by McClellan in spite of the War Department, had been reiterated by Meade August 24th, 1863, and was finally enacted into law by Congress, with little change, March 24th, 1864. This was the consummation; a degree of comparative perfection had been reached. The Ambulance Corps was complete in organization, personnel, and equipment. Its officers, however, were not medical officers, but line officers detailed to the Quartermaster Department; and it was a part of the quartermaster transportation; but under the control of the Medical Director. This feature was not ideal but seems to have worked well. The principal objection is that the ambulance officers could render no aid to the wounded.

The ambulance company of a corps—20,000 to 25,000 men—consisted of the following:

One Captain	1
One 1st Lieut. to each division.....	3 or 4
One 2nd Lieut. to each brigade.....	9 to 12
One Sergeant to each regiment.....	40 to 60
Three men to each ambulance.....	400 to 500
Two men to each wagon.....	6 to 8

The total is 13 to 17 officers and 500 to 600 enlisted men to a corps, a little larger than our modern division.

The transportation was:

Two army wagons to a division.....	6 to 8
One to three ambulances to a regiment.....	140 to 180
One cavalry forge to a division.....	3 to 4

Total, 150 to 190 vehicles to a corps; 45 to 50 to a division.

A typical division ambulance company was that of the First Division, Second Corps, 7,000 to 8,000 men.

5 officers.	2 army wagons.
21 sergeants.	1 forge.
230 men.	45 ambulances.

Ambulances were not confined to their own divisions; the commander of the ambulances of a corps could use all the ambulances wherever needed. The ambulances were all two-horse vehicles; they carried as many sitting patients as ours of today, but; as a rule, only two reclining patients. The four litter ambulance of General Rucker had not yet come into general use. This personnel and equipment may be compared with ours of today.

Field Hospitals.

A field hospital was organized for each division (6,000 to 8,000 men). The personnel and equipment depended on the size of the division, so it was not the same in all divisions, but was about as follows:

Three permanent medical officers.
Thirty-six enlisted men.
Six to eight wagons.
Twenty-five hospital tents.

With each division there were also a number of contract surgeons; how many, I am unable to learn.

There were about fourteen army wagons and four medicine wagons of a special type to each division. Two wagons carried the tentage, two carried cooking utensils, rations, and supplies, and ten carried the brigade and regimental supplies; all these were available for the field hospital.

When the Army crossed the Rapidan a light field hospital in about six wagons followed each division; the remainder of the wagons were with the great supply trains. There is no intimation in any report that I have seen that these hospitals were inadequate. There was, of course, a shortage of clothing and tentage; fortunately the weather was fine throughout the battle. Many of the wounded had only shelter tents for protection, and many others had but the shade of the trees.

The division hospital was based on the size of the division and the number of regiments in it. A good example is the hospital of the First Division, Sixth Army Corps.

Four medicine wagons, Autenreith.

Seventeen army wagons, six-mule.

Twenty-four hospital tents.

Thirty-four attendants.

Eight wagons carried the regimental supplies (twenty regiments); four the brigade supplies; and five the field hospital. The four medicine wagons were assigned to the four brigades but also formed part of the field hospital. In fact, the hospital could be divided into brigade sections. The Medical Director of the Army says that one of these hospitals could be set up or taken down and packed in forty-five minutes. An official circular directed: "When practicable the hospitals of the different divisions should be located near together—each one, however, to be kept perfectly independent and distinct in its management." The division hospitals were pitched and operated in brigade sections, with an operating table and a medicine wagon for each.

The Cavalry Corps had no division hospitals but had a corps hospital of 22 tents, similar to the division hospitals of infantry.

This hospital, however, never accompanied the cavalry on the great raids and did not accompany it in the Wilderness Campaign.

When the Cavalry Corps broke camp at Brandy Station only a few ambulances were taken along, with light supplies. The field hospital was packed and shipped back to Alexandria, where it remained, till about May 15th, when it was forwarded to Fredericksburg. It continued to hover around the field of operations and was in reality an evacuation hospital. The Cavalry Corps picked up wagons of all kinds on the march, but carried a few ambulances. One of the main reliances was the ammunition wagons, which, as a medical officer noted, were always emptied just as they were needed. It does not appear that there were many casualties among the cavalry in the Battle of the Wilderness.

The Engineer battalions, Reserve artillery, and General Patrick's provost guard also had their supplies, ambulances, and hospital tents.

The Ninth Corps, which did not become a part of the Army of the Potomac until May 25th, was very poorly provided with transportation of all kinds and had almost no divisional medical equipment. It was in about the same situation as were all the divisions two years earlier.

Its wounded, not many, were largely cared for by the other divisions.

Reserve Supplies.

In addition to the supplies carried by the divisions there was an army reserve supply train of thirty-five wagons, with the main supply trains. By 5 p. m. on May 5th this train was near the Old Wilderness Tavern, the center of the Union lines, ready to fill requisitions. The medical officer in charge of this train seems to have been disappointed that after all his exertions in getting his train to the front no one called on him for supplies. The first day's fighting just about measured the capacity of the hospitals; the second day called for all his bedding and clothing; his general supplies were requisitioned for the great train of wounded, as well as to replenish the wagons and ambulances for the next conflict. There was also a considerable amount of medical supplies and stores carried on five wagons belonging to the Sanitary Commission. These wagons carried chiefly delicacies of food, clothing and bedding.

The whole amount of medical supplies carried with the Army was calculated to be sufficient for ordinary needs for thirty days, and eight days' supplies for 20,000 wounded in addition. The wounded in large numbers were to be evacuated to the rear within eight days.

Provision was also made for sending large quantities of supplies (bedding, clothing, dressings, medicines, and special foods), from Alexandria to the evacuation hospitals. Cars stood on the tracks, loaded and ready to start at a moment's notice.

The train of reserve supplies proved a necessity; the number of wounded counted on—20,000—was far exceeded before thirty days had passed. In fact, it was nearly if not quite doubled. The first ten days of the campaign left more than 25,000 wounded to be cared for, besides sick and some of the enemy's wounded.

Transportation of Wounded to Advanced Base

Depot hospitals had heretofore been established, sometimes on or near the field, sometimes further back or at the advance base.

In this campaign they had been at Brandy Station about ten miles north of the Rapidan. But when the Army crossed the river these hospitals were broken up and the supplies shipped to Alexandria.

Still it seems to have been the intention to retain this point, or Rappahannock Station, as the advance base for a time. Instead of keeping medical supplies there, hospital trains were waiting and a large quantity of supplies were held in readiness by the Medical Supply Officer at Alexandria, but six hours to the rear. From Alexandria these supplies could be quickly forwarded, either to Brandy Station on the right flank of the Army, or to Fredericksburg on the left.

No provision was made for tentage, however, at either place, and when the wounded did reach Fredericksburg it was necessary to utilize buildings of all kinds. From either place the wounded could be readily evacuated to Washington and the North. Hospital trains had been especially devised for the Orange and Alexandria Railway; these trains of twelve cars carried from 300 to 400 patients, in comfortable bunks. Formerly

the wounded had been carried in freight cars bedded with straw. From Fredericksburg there was a short railway to Aquia Creek, from that point fine hospital boats carried the wounded to Washington. The only gap in the line was that part between the field hospitals and the depot (evacuation) hospitals. There were stretchers and ambulances at the front, trains and boats in the rear; but for this mid section of the route there was neither personnel nor equipment.

Empty supply wagons and the division ambulances (improperly) were to be used. The service proved unsatisfactory as will be seen.

II. MARCH TO THE FIELD.

The movement began with the first moments of May 4th, 1864; the divisions and corps, the reserve artillery, and immense trains moved out at midnight without confusion or delay and poured across the river into the Wilderness. Alexander bears witness that among Grant's great qualities was one of making his battles come off on time.

Hancock's (Second) Corps on the left, crossing at Ely's Ford, followed the Ely's Ford Road and reached Chancellorsville by nine in the morning, where it went into bivouac for the rest of the day. Warren's (Fifth) Corps on the right, crossing at Germanna Ford, followed the plank road and reached Old Wilderness Tavern in the afternoon, going into bivouac there. Sedgwick's (Sixth) Corps followed the Fifth Corps along the Germanna Plank Road and bivouacked for the night about two miles south of the Ford. All the corps were now on one road leading to the Southeast, with the Second Corps in advance and the Sixth Corps in the rear.

Although the wagon trains had been reduced they still numbered more than 4,000 wagons and formed a column that on a single road would have extended more than seventy miles. The trains crossed on the lee side of the Army, at Culpepper Mine and Ely's Fords, not being all over till the evening of the fifth. They moved slowly on to Chancellorsville where they remained until the eighth.

When the Army marched out at midnight each division was followed by one-half its infantry ammunition train, one-half its

ambulances, and a flying field hospital. The only other transportation was a few light spring wagons with the various headquarters, about fifteen to each corps. The remaining ammunition wagons, ambulances and hospital wagons were with the great supply trains, about five miles away.

This was an improvement on Gettysburg, where everything was kept far in the rear. Each soldier carried fifty cartridges and three days' rations. The supply trains carried ten days' rations and three days' forage.

The weather was fine and the roads good; the enemy offered no opposition and the seasoned troops made the fifteen miles' march without fatigue. On the evening of the fourth all were confident and joyful in the bivouacs, as though Fredericksburg and Chancellorsville had never been inscribed on their colors. But death lurked in every ravine and peered from every thicket of the Wilderness.

More than two thousand of these men were to leave their bones on the field, twelve thousand more were to be wounded, besides three thousand missing, many of whom were killed or wounded. When the Army took up the march for Spottsylvania, three days later, almost one man out of every four was missing from the ranks.

III. SERVICE OF THE FRONT.

Ambulance Corps.

When the battle began, about eight on the morning of the fifth, the ambulance sections of all the divisions were ready for the work.

The men were vigorous, the animals in good physical condition, and all the material was complete. Officers and men were rested and it is fortunate that they were so, for they had little rest again, either day or night, for ten days.

First aid and collection of the wounded differed somewhat in the different divisions; Billings deemed the method of the Fifth Corps best. Stretcher bearers followed the lines closely and often displayed great heroism in carrying off the wounded. Any temporary advance or lull in the combat was promptly taken advantage of. There was no thought of waiting till the battle was over, or even until night. The bearers removed the wounded to

sheltered spots called depots for wounded, or ambulance pickets, from three to five hundred yards behind the firing line. There was no Hospital Corps at this time, unless one should call the hospital stewards a hospital corps.

The sergeants and men of the Ambulance Corps were detailed from the line. Some hospital stewards accompanied the bearers in collecting the wounded and the regimental surgeons, stewards, and orderlies did the work of the aid or dressing stations.

In the Wilderness these stations could be established very close to the firing line, even for that period. In the Second and Sixth Corps there was a station for each brigade, in the Fifth one for each regiment (about 400 men). The ambulances were collected at an ambulance station further back; usually all the division sections in one park, and near the field hospitals. Two or three ambulances were kept ready at the advance station; when sufficient wounded had accumulated these ambulances were loaded, moved to the field hospital, unloaded, and returned to the main ambulance station. Thus few ambulances were exposed at one time. At the main ambulance station there was a medicine wagon, and dressings were carried to the front by the ambulances.

It was laid down that the stations were to be established at points to which ambulances could come forward.

The officers of the Ambulance Corps directed the work of the bearers as well as of the ambulances. Temporary dressings only were applied at these stations and temporary medicines given. No operations of any importance were undertaken.

In this battle the distance from the advance stations to the field hospitals averaged about one and a half miles. The ambulances followed by-roads, as a rule, leaving the main roads free to troops and ammunition wagons.

The fighting began early on the fifth but was not general and severe until about noon. Many wounded straggled back to the hospitals. McParlin estimated this number in general as about ten to twenty per cent of the whole. Of course the poorer the ambulance service the larger the per cent of wounded not (apparently) requiring transportation. With no ambulances whatever fifty per cent of the wounded would probably manage to reach the field hospitals. But this number should by no means be

used as a basis for estimating necessary ambulances. Many wounded would injure themselves in this way; worse, a large number of able-bodied men would leave the field under the pretext of assisting the wounded.

The number brought in on this day was: of the Second Corps, 600; of the Fifth Corps, 1,235; of the Sixth Corps, 1,000; total, 2,835.

Twice this number was brought in on the second day and night. The total number of wounded cared for in the two days was 8,300, as estimated by McParlin. The ambulances of the Fifth and Sixth Corps traveled fifty miles on the second day, and this was entirely in collecting; no wounded were sent to the rear until later. It is apparent that in a battle like the Wilderness one ambulance to 150 men was about the proper allowance. Every wounded man that could be found or safely reached was brought off the field promptly. A considerable number of wounded were too near the enemy's pickets to be reached and many could not be found in the thickets. About two hundred were estimated to have perished in the fires that burned along the front of the Second Corps on the afternoon of the second day. Several hundred of the enemy's wounded were also brought in.

The ambulance men had little rest on these two days and nights. On the 7th they found time to search the field for blankets and shelter tents. They brought in over 4,000 of these useful articles, sorely needed in the hospitals, where clothing and shelter were the only supplies short.

The ambulances of each Army Corps acted as a unit in collecting the wounded. Some extracts from the report of the chief ambulance officer of the Fifth Corps will throw additional light on ambulance work. This corps on May 1st numbered 24,423 officers and men, in four divisions, 11 brigades, 57 regiments and nine batteries.

The Ambulance Corps consisted of 17 officers and about 650 men.

In the ambulance train there were 176 ambulances, 10 medicine wagons, 58 army wagons, and four field forges. Of animals there were 524 horses and 349 mules. During the campaign six enlisted men were killed and twenty wounded; nine were taken prisoners. Two horses were killed, sixteen wounded and three captured. The ambulance train includes hospital wagons.

On June 1st this army corps numbered 19,321—almost the same as one of our modern divisions. The captain of the ambulance corps may be compared with the director of ambulance companies of a modern division.

* * * Report of Capt. Wm. F. Drum, 2nd Inf., Chief Ambulance Officer, Fifth Army Corps, from May 1st to June 30th, 1864. * * *

HEADQUARTERS, FIFTH ARMY CORPS, July 10th, 1864.

To Surgeon John J. Milhau, U. S. Army.

Medical Director, Fifth Corps.

SIR: I have the honor to submit a brief report of the operations of the Ambulance Corps of the Fifth Army Corps, from the commencement of the present campaign till June 30th, 1864.

On the march but a portion of the ambulances accompanied each division, the majority with the heavy portion of the trains (hospital trains) being generally ordered either in rear of the corps, or on some road that would not interfere with the marching of troops. * * * A portion of the hospital train was several times detached and sent to join the main train of the Corps, but after each battle the whole train was brought to the front. In all the battles the principal in the management of the train has been the same—that is, the ambulances have been sent where they were most needed without reference to any particular division. If any of the divisions suffered much more than the others the majority of the ambulances in the corps were used in transporting the wounded of that division. The next day some other divisions might suffer most, in that way the work was in the end about equal.

At the commencement of a battle I have generally parked my whole train of ambulances (176) at some central point, under charge of an officer.

I would then send a few ambulances as near as possible to the line of battle of each division; * * * as fast as the ambulances at the front were loaded and sent to the hospital, the officer in charge of the main park would send others to take their places; in this way placing the whole train at the disposal of the division most in need.

In the disposition of the officers, I placed one in charge of the main park, one or two to superintend the loading at each division, and the remainder to superintend the removal of the wounded from the field to the ambulances. It was also sometimes necessary to have an officer at the hospital to expedite the unloading. * * *

Owing to the difficulty in procuring forage, and the severe work they were subjected to, some of the teams were much reduced, and a few of the animals were lost; but not an army wagon was abandoned and but four ambulances. These were left on the road, having broken down and there was no time or means at hand to repair them. From the time we left

Culpepper till after we crossed the Chickahominy not a particle of grain was drawn from the Corps Quartermaster for the ambulance trains. The train supplied itself when within reach of a depot, and when corn could be found in the country it was seized.

In order to keep a train foraged properly it is necessary to keep two wagons in each division train for the purpose of hauling forage.

* * * It also requires at least one wagon to carry the Q. M. property and personal effects of the ambulance officers. * * *

During the campaign the ambulance train of the Fifth Army Corps had removed over 8,000 wounded men from the field of battle to the hospital, and assisted in removing the same number and over one thousand sick to the depots to be sent North. * * *

W. F. DRUM, *Capt. and Chief Ambulance Officer, Fifth Corps.*

Yet this splendid ambulance corps is never mentioned in a report of a general officer; indeed one might read the reports of line officers without knowing that the Army had either field hospitals or ambulances. On the other hand, the report of the Medical Director of the Army for this period is the best and most complete report made by any officer of the Army.

In 1898 Colonel Greenleaf followed the plan of these organizations closely, and the Fifth Army Corps had both field hospitals and ambulance trains organized at Tampa. Unfortunately those in control of the expedition either had forgotten the experience of '61, or considered these things of lesser importance, for all wagons were left behind and all but three ambulances. So soon are lessons learned in the dear school of experience forgotten.

. Field Hospitals.

On the morning of May 5th the Army was in a sort of a huge column of masses along the Germanna Ford and Orange Roads. On learning that Lee's corps were pressing on from the West to strike his column in flank, Grant, instead of pursuing the march, faced his divisions to the right and pushed them forward one or two miles in the woods to the west and south, where they formed an irregular line of battle and constructed temporary intrenchments. The line of battle advanced and was pressed back as the conflict rose and fell but did not vary much from this first established line. It was about the right distance in front of the Germanna Road to make it the fighting base of the Army. Head-

quarters was at the Lacy House near the Tavern, with the reserves, ammunition wagons, and hospitals on or near the road. I am unable to learn who located these hospitals.

The hospitals of the Second Corps were grouped together near the Carpenter House, an excellent location, with running water and two good ambulance roads to the front, a mile to a mile and a half away. It was in advance of the main road but interfered with no other hospital or troops.

The hospitals of the Fifth Corps were also grouped together, near a small stream which crosses the Orange Pike one mile east of the Tavern.

They were a little farther from the front than the others and on the main road, being a mile directly behind the headquarters of the Army.

Water was obtained from some excellent springs nearby and fuel was abundant everywhere. Everything was ready at this hospital an hour before the wounded began to arrive. It is worthy of note that a surgeon with attendants was stationed at the Tavern, to dress the wounded who might be straggling along the road to the rear. Between noon and nine P. M. on the fifth the hospital received, dressed, fed, and sheltered 1,235 wounded men. Also records were kept of all cases. One sees why Billings spoke so highly of the medical work of this corps.

The Sixth Corps stretched from the right of the Fifth on north to the Rapidan. It was somewhat more extended than the other corps and its division hospitals were pitched separately. The hospital of the First Division was at the Spottswood House on the Germanna Plank Road; that of the Second Division was behind the road, on Wilderness Run, near the Woodville Mine; that of the Third Division was near the Tavern.

These hospitals do not appear to have been well located; they were too near the front and that of the Third Division was on the road leading to the hospitals of the Fifth Corps, which was liable to mix the wounded unnecessarily. It appears that they should have been located back of the Germanna Road, on roads leading to Culpepper Ford.

On the evening of the Sixth when Gordon's flanking attack rolled up Rickett's Division and forced it back, some shells fell about the Spottswood House, but did little damage. That night

all the hospitals of the Sixth Corps were removed and collected near Dowdall's Tavern. By this time the battle had shifted to the left and one of Sedgwick's divisions was fighting in Hancock's line. In reality the battle was over, but no one then knew it.

By the morning of the seventh practically all the wounded were in. The influx to the Second Corps hospitals was so great that the keeping of records was impossible and a thousand or more wounded were unrecorded. The heaviest fighting on the afternoon of the sixth had been in this quarter; General Grant termed it the hardest fighting ever seen on the continent. The hospitals must have been literally swamped. No wounded were evacuated to the rear; by the morning of the seventh these eleven field hospitals contained between eight and nine thousand wounded. Fortunately the weather was fine and there was no suffering from exposure.

Billings reported later that the hospitals had been at all times supplied with everything necessary *except bedding and clothing*. This was the principal shortage reported at many field hospitals in many places.

The organization of a field hospital was that of Letterman:

- One officer in charge.
- One officer to provide food and shelter.
- One officer to keep records.
- Three operating surgeons.
- Two or three assistants to each operator.
- Total, twelve to fifteen officers.
- About thirty-six attendants.

The first three only were permanent officers. The three operating surgeons were, as a rule, the brigade surgeons of the division. They and their assistants were temporarily detailed to the hospital before an engagement.

The majority of cases were operated on before being sent to the rear, the number of primary operations being very great. The amount of work done at these field hospitals is not apparent at a glance. A little calculation will show it to have been enormous. For example, the hospitals of the Fifth Corps attended over 1,200 wounded between noon and nine p. m. on the fifth. This gives 300 wounded for each of the four division hospitals, or 100 for

each brigade section. Counting one-fourth as slightly wounded, there were yet 75, allowing each man but eight minutes on the operating table.

We, who today in our hospitals think four or five operative cases a big day's work may have some adequate idea of the amount of work required to care for seventy-five cases in nine hours. It is true that there were no long tedious operations in those days. But there were many more operations—such as amputations, excisions, ligations and the like.

Following this battle there were 108 excisions and 560 amputations. The statistics of this battle and Spottsylvania throw an interesting light on the use of the bayonet. These two battles are generally, and rightfully considered as the most murderous of the war. The lines were very close and, more especially at Spottsylvania, hand to hand. A writer in "The Photographic History of the War" says, "The Bayonet ended what the rifle began." Surely here, if anywhere, we shall see bayonet wounds. There were 16,331 wounded recorded by McParlin from these battles. In all the two days' struggle in the Wilderness there were just four men wounded with this weapon. Probably more than that number were rendered *hors du combat* by being kicked by mules. In the five days' struggle about Spottsylvania, including Upton's charge and the long, desperate contest at the Bloody Angle, there were but fourteen bayonet wounds, an entirely negligible percentage.

When all the wounded had been collected the remaining regimental officers could also be called in to assist at the division hospitals. The chaplains usually assisted in the record office. About this time a commissary officer was assigned to each division hospital. For dressing, nursing and such work there were 36 men, more or less permanently detailed. These men were taken from the line. All the band men of the division were to assist at the division hospital, particularly at fatigue work. They proved to be of little value for this purpose, as might have been expected.

The success of the Ambulance Corps and Field Hospitals in collecting, sheltering, feeding, and dressing the wounded was truly remarkable; and in striking contrast to the appalling results of the bold and strenuous surgery of those days.

The keeping of records was not entirely successful. There were records of 7,300 wounded treated in the hospitals, and McParlin estimated that of 1,000 more wounded no records were made. It seems probable that the number unrecorded was much greater than a thousand. This I should say was due to an insufficient number of competent noncommissioned officers and other enlisted men. Thirty-six to a field hospital is manifestly not enough. Our present allowance is none too large. There seems to have been a sufficient number of officers.

The ambulance company camped near the hospital and its men assisted in pitching the tents and other work when possible.

All the work of dressing and operating was finished by the evening of the seventh. That evening General Meade ordered all the wounded collected in one great train and sent back to the railway, and to Washington. The work of loading the wagons and ambulances went on all that night.

IV. SERVICE OF THE REAR.

The weak point in the Letterman system was that there was no provision for systematic removal of the wounded from field hospital to the advance base at head of rail or water transportation. Letterman did not remain in the Service to work out this last detail, and it can hardly be said to have been worked out today. The expectation was that after the wounded had all been collected, at least a part of the ambulances could be released, and that these, with empty supply wagons returning to the base, would be sufficient. In the days of McClellan and Hooker, when the Army fought a battle and then rested for some months, this expectation was generally realized; though it failed signally when Lee pressed McClellan day after day on the Peninsula. With Grant at the head of the Army, fighting one desperate battle after another, it was bound to fail. After the Wilderness, using all the ambulances and wagons that could be spared, there was still not enough transportation; and that was not the only ill result. The ambulances that went with wounded to Fredericksburg did not get back in time for the opening struggles about Spottsylvania; and when they did get back they were stripped of their supplies, and men and animals were exhausted by seven days

and nights of continuous work. Also the army wagons were unsuited for wounded men.

Billings says, "The greatest amount of suffering to the wounded has occurred necessarily during their transit from the field to the depot hospitals. Army wagons have necessarily been used, and the distance traveled has usually been ten to twenty miles; the patients on several occasions remaining from 24 to 48 hours in the wagons." The suffering arising from this management cannot be imagined. Of the wounded in one train fourteen died on the road.

On May 7th there was no fighting; that evening General Meade ordered all the wounded collected in one huge train and sent back to the railway, and to Washington. For this train supply wagons to the enormous number of 325 were emptied and turned over by the Quartermaster Department.

To these were added practically all the ambulances of the Army, 488 in number. These 813 vehicles with their attendants and the wounded able to march made a column seven miles long. Yet with this great train more than a thousand were left behind. Some of these, of course, could not bear transportation. A part of them were brought in later, some were carried away to Richmond as prisoners, very many died.

The wagons were prepared by bedding them with boughs covered with shelter tents and blankets. The wounded were divided into three classes: first, those able to march; second, those able to ride in wagons; third, the severely wounded, who were carried in ambulances. This tragic procession conveyed over 7,000 maimed and suffering men. What an argument for peace advocates would be a moving picture film of this column as it dragged along the Fredericksburg Pike that day.

To care for it there were detailed 30 medical officers, 15 stewards and 150 men. Rations, dressings, and medicines for three days were supplied. The Quartermaster Department offered every facility, without which the wounded could not have been removed.

The loading began during the night of May 7th. The ambulances were loaded with the worst cases and sent off first, accompanied by those able to march on foot. The train moved very early on the morning of the eighth and had passed Ely's Ford, when an order came to turn back and proceed to Fred-

ericksburg. The Army was moving southeast toward Spottsylvania and the temporary base had been shifted. The train of wounded then moved by the Pike, escorted by two small regiments, and reached Fredericksburg at 1 a. m. on the 9th; having been more than thirty hours on the road. No deaths are recorded. Fortunately the wounded were not loaded in a driving rain and the march made through mud, darkness and storm, as happened a few days later.

Meanwhile the medical supplies held ready at Alexandria (supplies for 3,000 men for seven days) had been forwarded to Rappahannock Station on the eighth, brought back to Alexandria on the ninth, and again forwarded to Fredericksburg—or Belle Plain—reaching there on the tenth, one day late. The Surgeon General sent two Medical Supply Steamers direct from Washington, and it is worthy of notice that these were the first supply boats of any kind to reach the new base. They were at Belle Plain before any wounded arrived there.

The ambulances were stripped of their supplies and started back the same evening, reaching the Army again on the tenth. It is hardly necessary to say that every one with them was exhausted. The ambulances had been needed on the eighth for the fighting about Todd's Tavern. In their absence the wounded straggled over the country causing much confusion. But that story belongs to another battle.

Fredericksburg was again converted into a hospital. All the public buildings were taken and many private ones. Wounded officers were billeted on families. There was a famine of supplies at first but this was soon remedied, as seen above. The wounded were grouped by corps in certain parts of the town. On May 10th the supplies began to arrive from Alexandria, and with them a force of surgeons. The remaining wounded from the Wilderness arrived in the next four days; meanwhile another stream was pouring in from Spottsylvania.

The evacuation of wounded to Washington began at once, the most serious cases being sent first. The route was by road to Belle Plain or by railway to Aquia Creek; from there by boat. On May 20th 300 hospital tents arrived and as many as possible of the wounded were removed to these tents, pitched outside the town.

By May 28th all the wounded had been removed; the hospital was broken up and the supplies sent to White House, the next base of the Army. During the nineteen days that this hospital was in existence at Fredericksburg more than 26,000 wounded and sick passed through it. I believe this is the record for numbers and time.

It will be noted that no evacuation hospitals were brought forward to the battlefield, as at Antietam and Gettysburg. The field was cleared of wounded and abandoned. This was because it was in the enemy's territory and unsafe. Also it was in an unfavorable locality, away from the railroads. In order that empty supply wagons could be used for the wounded it was necessary that the evacuation hospital be at the supply base, at the head of rail transportation.

COMMENTS.

Little fault can be found with the organization of the Medical Department or the order specifying what parts of it should march with the troops. Defects which have been remedied since were: in personnel of the ambulance corps; insufficient number of permanent officers with field hospitals; and the single aid and dressing station combined.

The complete breaking up of the base hospital at Brandy Station does not appear to have been entirely advisable. It is true that Alexandria was but six hours away and that supplies were sent forward promptly. In spite of a false start they reached Fredericksburg but one day late. But these supplies did not include tentage. Had the seven thousand wounded been taken to the railway as started, they would have been unloaded at the station without shelter, instead of at Fredericksburg, where there were plenty of buildings. Aside from the question of shelter there could be no criticism. At any rate the error, if it be an error, was not of the Medical Department. The base at Brandy Station was abandoned by order of the general, probably to avoid sparing troops to guard it.

On May 8th the Army was stripped of ambulances, and a great battle beginning. There was some severe fighting that day in front of Todd's Tavern, resulting in some fifteen hundred wounded. McParlin says, "Slightly wounded men were strag-

gling all over the country, in every direction except toward the front. The stretcher bearers labored faithfully, but the number of wounded was so large, and the distance that they had to be carried was so great that the evils mentioned could not be prevented." As a partial remedy, all the headquarters wagons of the whole Army (about sixty) were seized and used as ambulances.

When the next train of wounded was made up wagons alone were used; no ambulances were allowed to leave the front. These wagons were uncomfortable and insufficient in numbers.

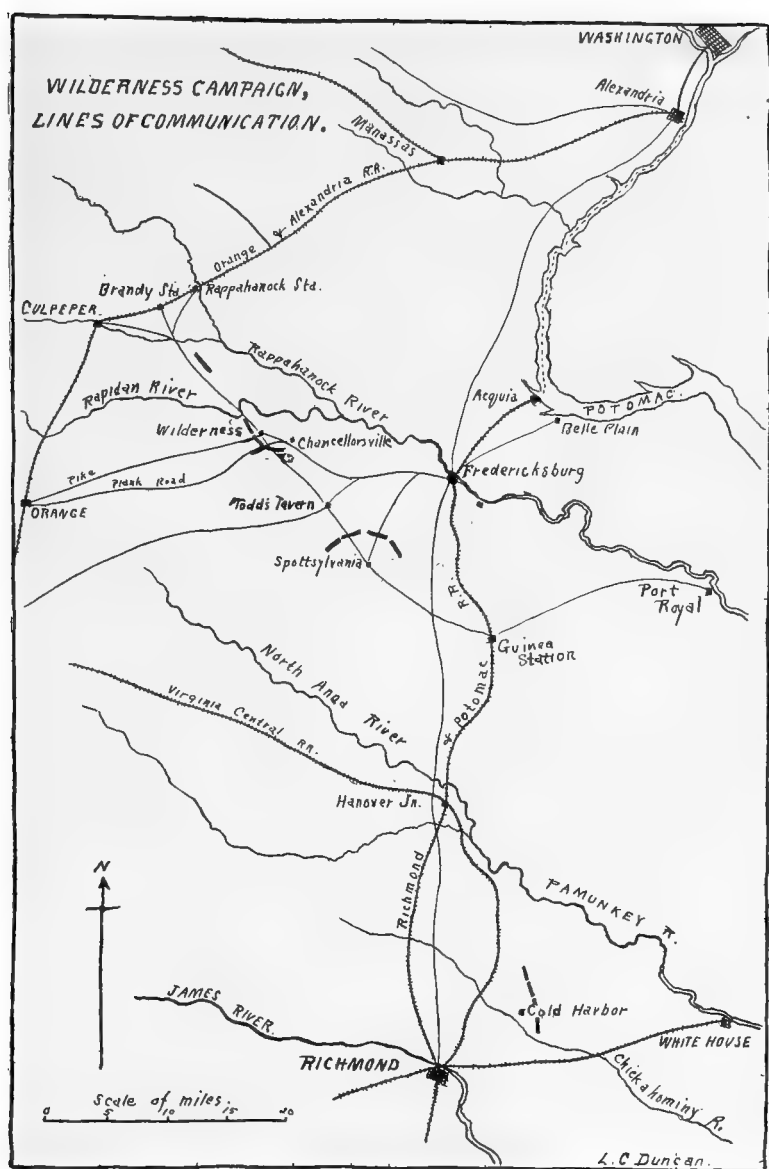
Holding all wounded in the hospitals until the night of the 7th was by direction of the Commanding General. But they could not have been started earlier in any event from lack of transport. Could a stream of wounded have been started to the rear on the afternoon of the 5th, the over-crowding of field hospitals would have been much lessened.

The gathering of blankets and shelter tents from the field is an interesting thing. It seems to have been a regular procedure in this campaign, and furnished the only bedding and shelter for thousands of wounded.

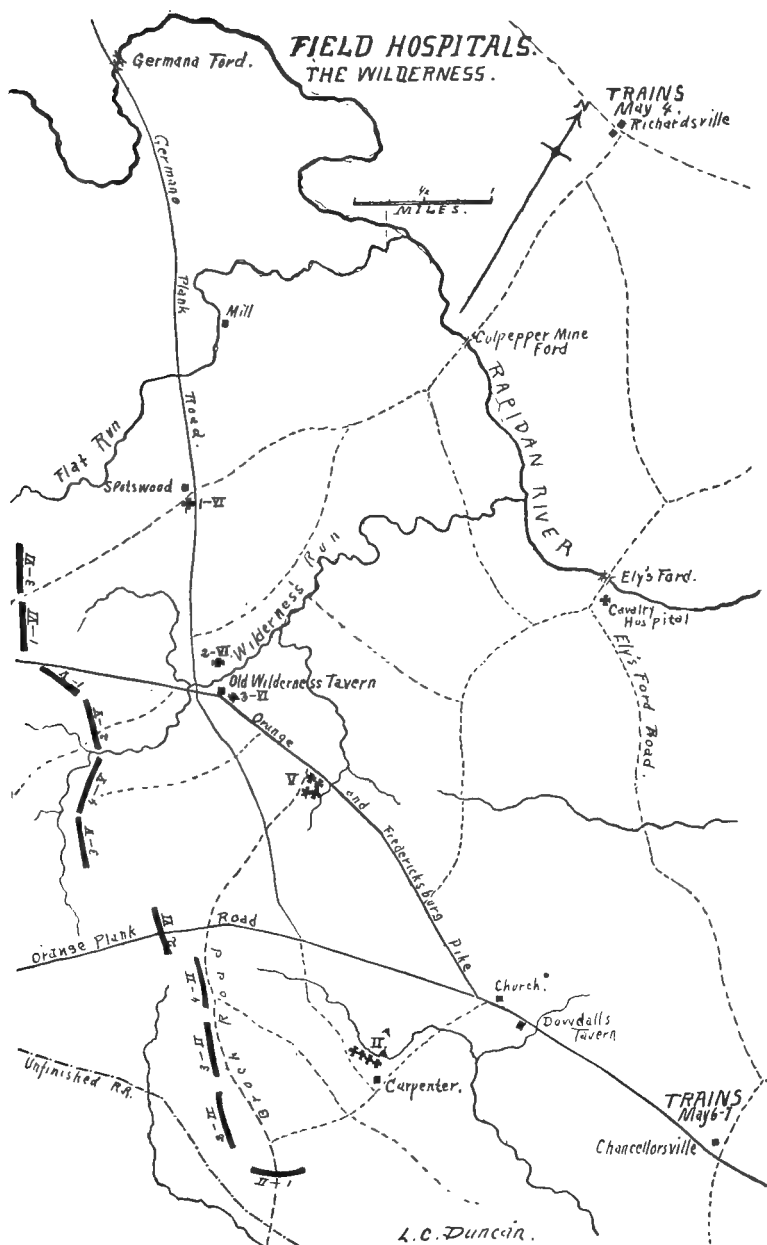
The Autenreith Medicine Wagon was so universally used, approved, and commended that one feels like prophesying that in case of a great and long continued war a similar wagon would again come into use. All medical officers thought it superior to a heavy wagon with medicines packed in boxes. This type of wagon required no packing and unpacking.

The principal differences between the whole system of sanitary tactics then and now are two. The ambulance train was then a quartermaster organization. The change to a medical personnel has been made recently. This places the entire management of the wounded in the hands of the medical department. It leaves regimental officers free for their own work; it places the handling of the wounded in medical hands; it gives a larger force to draw on for the field hospitals. There is one thing yet lacking—transportation.

The other great difference is, the general advance in the influence, authority, and prestige of the Medical Department as a whole. In recent years the Medical Department has become, after the line, one of the most important parts of the Army.



THE WILDERNESS CAMPAIGN, LINES OF COMMUNICATION.



FIELD HOSPITALS, BATTLE OF THE WILDERNESS.

After all criticisms have been made it must be said that the organization of the Medical Department of the Army of the Potomac was, for the times, excellent, and that its operations during the Battle of the Wilderness were in the main satisfactory. In fact, one reads of the sanitary tactics of those days with amazement that they should have been so good ; and easily imagines that he is reading of the events of today. If the reader turns to the surgical records, he goes back to a distant age, and might easily imagine himself reading of the surgery of the ancient Egyptians.

If, taking into consideration the advances in military science, improvements in communication and transportation, and the science of efficiency in labor, the Medical Department in the next great war is proportionately as successful as was that of the Army of the Potomac in 1864, it will not have to seek excuses and apologies for its conduct.

But it should not be forgotten that the work done at the Wilderness was the fruit of three years' experiments, ranging from dismal and total failure at Bull Run to comparative success at Gettysburg. The cause of failure was lack both of system and of personnel and equipment.

At present we have an admirable system.

It is to be regretted that no medical officer who took part in these campaigns has put his experience in writing for the benefit of those of us who have had no such opportunity. I hope it is not yet too late. Such memoirs have an incalculable value.

APPENDIX.

Medical officers of the Army of the Potomac, at the time of the Battle of the Wilderness:

Medical Director: Surgeon Thomas A. McParlin, U. S. Army.

Assistant Medical Director: Surgeon J. F. Ghiselin, U. S. Army.

Assistant Medical Director: Asst. Surgeon J. S. Billings, U. S. Army,
in charge of records and statistics.

Medical Purveyor: Asst. Surgeon J. B. Brinton, U. S. Army.

Medical Director, 2nd Army Corps: Surgeon A. N. Dougherty, U. S.
Volunteers.

Medical Director, 5th Army Corps: Surgeon J. J. Milhau, U. S. Army.

Medical Director, 6th Army Corps: Surgeon S. A. Holman, U. S.
Volunteers.

Medical Director, Cavalry Corps: Surgeon R. W. Pease, U. S. Volun-
teers.

Surgeon in charge of Depot Hospital, Fredericksburg: Surgeon E. B.
Dalton, U. S. Volunteers.

WHEN SHERMAN MARCHED DOWN TO THE SEA.

FOR the general reader the most interesting campaign of the war is by common consent Sherman's famous "March to the Sea." It has been embalmed in song and story until it has scarcely less renown than its prototype of antiquity so graphically described by Xenophon. Even the name lends itself to euphonious historical literature, like Hohenlinden and Roncesvalles. While it is true that this celebrated march met with practically no opposition, that it was in Sherman's opinion a change of base rather than a campaign, that it was mainly a problem of moving trains and supplying the army, the novelty and picturesqueness of the whole undertaking still make it a never-failing source of controversy and study. However simple it looks to us now, it by no means looked so simple before it had been accomplished. Thomas hoped Sherman would not undertake it, Grant was in doubt, and Lincoln was fearful.

Being a new thing under the sun it opened a number of problems, for the supply departments, the Quartermaster, the Commissary, and the Ordnance, and also for the Medical Department. Heretofore all campaigns of importance had bases and lines of communications; supplies could be brought up and wounded shipped off to the rear as fast as they accumulated. Now an army of 65,000 men was to cut loose from its base and move into the enemy's country. All supplies, and what was more difficult, all sick and wounded must be carried along, or left behind in the neighborhood of Millen and Andersonville.

The medical problem was even more difficult than the others; a considerable part of the ration and forage could be gathered from the country, but medical and surgical supplies could not be gathered like sweet potatoes and corn. Transportation for the disabled was still more difficult, in fact, in a severe campaign it would have been impossible.

Severe fighting was not within the range of reasonable probability; Hood was far away and Lee could spare no man from Richmond. Sherman doubtless expected no great battles, but probably anticipated more fighting than actually occurred.

Almost everyone considered the proposed march a grave, dif-

ficult, and dangerous undertaking. It proved easy to accomplish. General Cox wrote afterwards that he remembered it as a gigantic outing or picknicking party. But after they are accomplished most great things look simple; in fact most great things are simple.

CHATTANOOGA TO ATLANTA.

While the March to the Sea was the march from Atlanta to Savannah, the campaign leading up to Atlanta is a part of the same grand movement, and a review of some of its most important medical features will be made.

For this campaign General Sherman had an army of one hundred thousand men, or rather he had three armies totalling that number. His forces were maintained in three separate armies, somewhat after the fashion of the Germans and Japanese in later days. Thomas commanded the Army of the Cumberland, three corps, with sixty thousand men present for duty. McPherson led the Army of the Tennessee, consisting of parts of two corps, about twenty-five thousand men. A third army corps joined McPherson in June. Schofield's Army of the Ohio was made up of one army corps and a cavalry division, amounting to fourteen thousand men. The Army of the Cumberland had an entity almost from the beginning of the war; it had fought at Stone's River, Chickamauga, and Chattanooga. The Army of the Tennessee was brought from the Mississippi and had had no separate existence. The Army of the Ohio had been organized the year before for operations about Knoxville, and now came from that place for the Atlanta campaign.

It seems a heterogenous force, but proved an efficient machine. To quote the Confederate Colonel Breckenridge: "It was a superb army, admirably equipped, abundantly supplied, excellently led. It was veteran and had known victory. It had pushed its antagonist out of Kentucky with the surrender of Donelson; had captured Tennessee, captured Vicksburg, repossessed the Mississippi, driven its foe over Missionary Ridge in flight. It knew how to fight and was willing to fight." I believe that students of tactics and strategy unite in pronouncing this campaign the most scientific of the longer operations of the war.

The separate armies had separate bases at Chattanooga, Hunts-

ville, and Knoxville; but this plan was found to be impracticable and Chattanooga became the actual advance base for the united armies. Nashville, one hundred and fifty miles further back, was the main base, with depots at Louisville and St. Louis. All supplies were brought forward from Nashville on one line of railway, very poor and frequently interrupted. All sick and wounded had to be evacuated in the same way, except that a part of the wounded of the Army of the Ohio were sent to the nominal base of that army at Knoxville.

In 1864, the Government was well provided with general or base hospitals.

In the fall of that year there were hospitals in the Department of the Cumberland as follows: Chattanooga, 3600 beds; Nashville, 8270 beds; Tullahoma and Murfreesboro, 830 beds; total, 12,700 beds. In the Department of the Ohio there were: at Louisville, 3868 beds; New Albany, 1618 beds; Jeffersonville, 4262 beds; Knoxville, 2057; total, 11,805. The grand total is 24,500 beds and does not include many smaller hospitals at garrisoned posts. After providing for all local forces there must have been beds for from twelve to fifteen per cent of General Sherman's combined armies.

In equipment the Army of the Cumberland excelled. General Thomas appears to have been a great organizer. He had the best supply trains, the best engineer equipment, the best ambulance and hospital arrangements, the best railway and hospital trains. The Army of the Ohio was less well provided with medical equipment, but the other armies now profited by the example of the Army of the Cumberland and improved their equipment as the campaign progressed. At the outset the brigade hospital system obtained. Medical Director George E. Cooper, U. S. A., says: "Previous to entering on this campaign each brigade had a medicine wagon and two army wagons to carry canvas and supplies for a brigade field hospital. An operating staff had been detailed and everything systematized so that during an action the wounded might receive prompt and systematic attention. The ambulance corps, organized under the new system (Letterman), had been untried."

A peculiar feature was that the cavalry divisions, numbering close to ten thousand men, were allowed no ambulances, this by

order of the commanding general, who instructed that men not able to ride be left in houses, and authorized contracting for their care at the rate of one dollar gold per day. As a matter of fact, the wounded from the cavalry, not many in numbers, were cared for in the infantry division hospitals. This order was a mistake. For regimental medical supplies, although but three wagons were allowed to a regiment, one was allotted to the Medical Department.

It was the mediocre and inexperienced generals who neglected adequate medical arrangements during the war. The armies of the great leaders like Grant, Sherman, and Thomas, were always well, almost lavishly, supplied.

For reserve supplies there was a train of thirty wagons, in charge of Asst. Surgeon J. W. Craig, 10th Illinois Infantry. The Sanitary Commission also kept supplies with the army, and especially at the hospitals along the railway line. The division hospitals were organized on the basis of ten beds to a regiment of less than four hundred men. It is to be remembered that the fighting strength of the three hundred odd regiments of these armies seldom amounted to more than one-half the number borne on the muster rolls.

The most interesting and instructive medical feature of the campaign was, perhaps, the evacuation of the sick and wounded to the rear, as the army advanced. For this purpose the Army of the Cumberland had excellent hospital trains devised by its medical director, and a great field hospital of a thousand beds, which was what we should now call an evacuation, or clearing hospital. There were three trains of ten to twelve hospital cars each. The cars had a capacity of thirty reclining patients, and this was the only class of patients that had the luxury of a hospital car.

The car devised and perfected by Surgeon Cooper gave the most general satisfaction. It was improvised from an ordinary day coach, by turning two seats together and connecting them by slats, on which bed sacks were placed. These lower beds were for the more gravely wounded, though two patients were sometimes placed in one bed. The upper berths were like stretchers, suspended from the wall, and by rods from the roof. The less severely wounded were placed in the upper berths. It

was planned to have one train leave the hospital daily. This would possibly have sufficed for the more severely wounded and sick.

General Thomas accorded the fullest authority to Medical Director Cooper to select for the hospital trains the best locomotives and cars to be found, and to have new cars fitted up when necessary. On these hospital trains the smokestacks of the locomotives were painted a brilliant scarlet; the exterior of the cabs and tenders were of the same conspicuous color.

At night, beneath the headlight of the engine, three red lanterns were suspended in a row. These distinguishing signals were recognized by the Confederates. It is said that both Generals Morgan and Forrest gave strict orders that the Federal hospital trains should not be molested, and should be given timely notice in case the road was destroyed. I know not how reliable these statements are, but can find no record of any happenings to the contrary.

As far as the records show the first official step toward organizing hospital trains was a letter written August 11th, 1863, directing the Medical Director of the Army of the Cumberland to fit up a special hospital train to run between Louisville and Nashville. A hospital train was already running on the same line and had been for six months or more. It was fitted up by the Sanitary Commission, as were the first hospital trains in the East.

The clearing hospital had tentage, bedding, and general equipment, but no transportation. It was brought forward along the railway, step by step, and cared for the sick and wounded until they could be transported to the rear. It generally relieved the division field hospitals in from two to five days. While the Army followed the line of the Western and Atlantic Railway in general, it left this line at times to make flanking movements; notably, before Resaca, and again at Dallas, where the right wing was about twenty-five miles from the railway base at Kingston.

The importance of keeping a large part of the rank and file of an army from drifting to the rear has been shown recently by Major Munson.

The returns of Sherman's armies are for territorial divisions, not for armies in the field. The returns of the Department of the Cumberland for April, 1864, show the following:

Present for duty-----	88,883	or 52%
Present sick-----	6,501	" 4%
Total present, not for duty-----	17,767	" 10%
Total present-----	106,650	" 62%
Absent sick-----	18,885	" 11%
Total absent-----	64,800	" 38%
Total sick, present and absent-----		15%

In other words, out of each 100 men on the muster rolls, 62 were present and 52 were present for duty on the firing line. Of the 48 not available at the crucial point, 15 were absent on account of sickness and 33 from other reasons.

This campaign should have begun simultaneously with Grant's advance in Virginia, but the armies had to be brought together from a distance and they were not in touch with each other until May 7th, the day after the Battle of the Wilderness. The advance base, or rail head, was at Ringgold.

The first stand made by General Johnston was in front of Dalton.

There was desultory fighting about Dalton on the 8th, 9th, and 10th, in which there were no great casualties. The clearing hospital was at Ringgold and remained there until Resaca was gained. On May 11th the armies left the railway to make a flanking movement through Snake Creek Gap and strike the road in Johnston's rear at Resaca. There was fighting in front of Resaca on the 13th and 14th, but the principal and successful attack was made on May 15th.

The total casualties at Dalton and Resaca were: killed, 600; wounded, 3375. Many of this large proportion of wounded must have been but slightly injured. General Sherman says it was not necessary to send many of the wounded to the rear. The wounded were cared for in the field hospitals for a few days only. The railroad was repaired by the evening of the 16th and the clearing hospital being brought up, took over the wounded and cared for them until they could be sent back to Chattanooga, or to duty.

This clearing hospital belonged to the Army of the Cumberland. The other armies were under the necessity of improvising hospitals in buildings in Resaca. Later they procured tentage and equipment for tent hospitals.

One stage of the campaign was finished; the next stage covered the territory extending from Resaca to Kingston. All the armies

now advanced along the railway southward, encountering very little opposition.

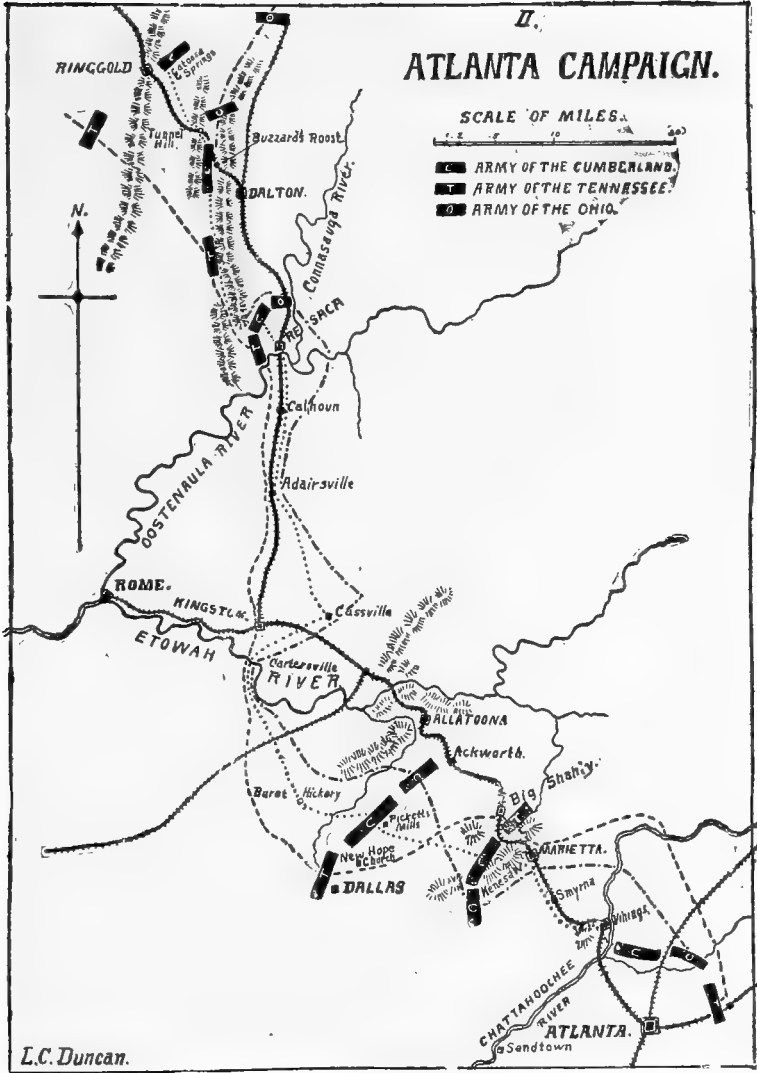
Kingston was entered on May 20th and the troops rested there three days while the railway was being repaired and supplies brought up for the next step. Kingston was made a small temporary depot. When the Confederates evacuated the place they abandoned a hospital of 250 beds. This hospital was taken possession of, increased to 750 beds, and used as a clearing hospital until Allatoona was occupied.

The armies marched forward again on May 23rd. From Kingston the railway runs eastward to Allatoona, a very strong position. So the railway was left and the armies marched straight south to Dallas, carrying twenty days' supplies in the wagons. About this time rains began, and the country being in a state of nature, it was difficult to move the trains. Dallas was reached on the 25th, about twenty-five miles from the railway. Now began the series of contests lasting a week and known as the Battle of New Hope Church. Sherman says the soldiers called the rough, wooded, roadless wilderness "Hell Hole," a not inappropriate name for a trackless wild, where blind and deadly fighting was carried on for seven days without much result. There were confusing attacks and counter attacks along a front of six to ten miles and gloomy rainy weather made this woods fighting still more dispiriting.

The fighting was not decisive, but by June 1st the left wing had reached the railway in rear of Allatoona and the object of the movement was gained.

The railway was repaired and the base advanced to Allatoona by June 6th. The wounded in the battles about New Hope Church and Pickett's Mills amounted to about four thousand, but as these casualties were scattered over seven days the average number of wounded to be cared for on one day was less than six hundred in the whole army. The wounded each day were considerably less than one per cent of the entire command. Sherman and Johnson were carrying on a decisive campaign with far less effusion of blood than were Grant and Lee.

At Resaca the field of battle was near the railway and transportation was simple. Here the railway was at a distance of twenty to twenty-five miles, over almost no roads, and the weather



was unfavorable. It is stated that there were 860 ambulances with these forces. The proportion is so large, one ambulance to each one hundred and twenty men, that it is scarcely credible. Those wounded in the first few days' fighting were carried back to Kingston in ambulances and wagons. The following order was issued:

HEADQUARTERS MILITARY DIVISION OF THE MISSISSIPPI,
In the Field near Dallas, May 29th, 1864.

Major Generals McPherson and Schofield:

I am directed by the General Commanding to inform you that on Tuesday next General Thomas will send to Kingston a train of empty wagons, under escort of one brigade, for the purpose of bringing forward supplies. General Sherman desires you likewise to make up a train and send it at the same time; one regiment will be sufficient guard. Send back in these wagons all your sick and wounded proper to go to the rear, and have your commissary and quartermaster notify the chief commissary. * * *

Instruct the officer in charge of your train to avail himself of the movements of General Blair to return to your command under cover.

I am with respect, yours, truly,
L. M. DAYTON, *Aide-de-Camp*.

Those wounded in the latter days were held in the field hospitals until the railroad was grasped at Ackworth when they were placed in temporary hospitals established at that place. As soon as the bridge over the Etowah could be rebuilt, supply trains were brought up and the wounded were sent to the rear in these box cars, without waiting for the hospital trains.

The rebuilding of the bridge was a large undertaking and was not finished till June 11th. The clearing hospital was now brought up to Big Shanty Station. The armies were supplied from several stations and again moved forward. General Blair's Seventeenth Corps arrived and joined the army about this time. His nine thousand men made good the losses thus far sustained and again raised the number of troops to one hundred thousand men.

Surgeon Cooper, who had been absent on account of an attack

of malarial fever, joined the army on June 10th, at Big Shanty. Up to this time Surgeon Glover Perrin, U. S. A. had been acting as Medical Director of the Army of the Cumberland. Surgeon Cooper found the brigade hospitals still in existence. He says: "Finding that they did not work smoothly, the brigade sections were consolidated into division sections, and these placed under charge of one medical officer. This consolidation was found to be very much more practicable and economical, both in rations and medical supplies, and in care of the wounded. The innovation proved serviceable in every respect, particularly when movements were contemplated and the sick required transportation to the rear; as well as during action; for instead of being brought to the brigade hospitals, where often the surgeons were overworked, the entire operating staff of the division was at the disposal of the brigade whose loss was heaviest. The surgeons, too, had conceived the idea that their especial duty was to attend to the wounded of the regiment to which they belonged, or, at most, of the brigade to which they were attached. The consolidation of the brigade hospitals avoided the evils resulting from this idea, and all men belonging to the division were cared for, regardless of the brigade to which they were attached."

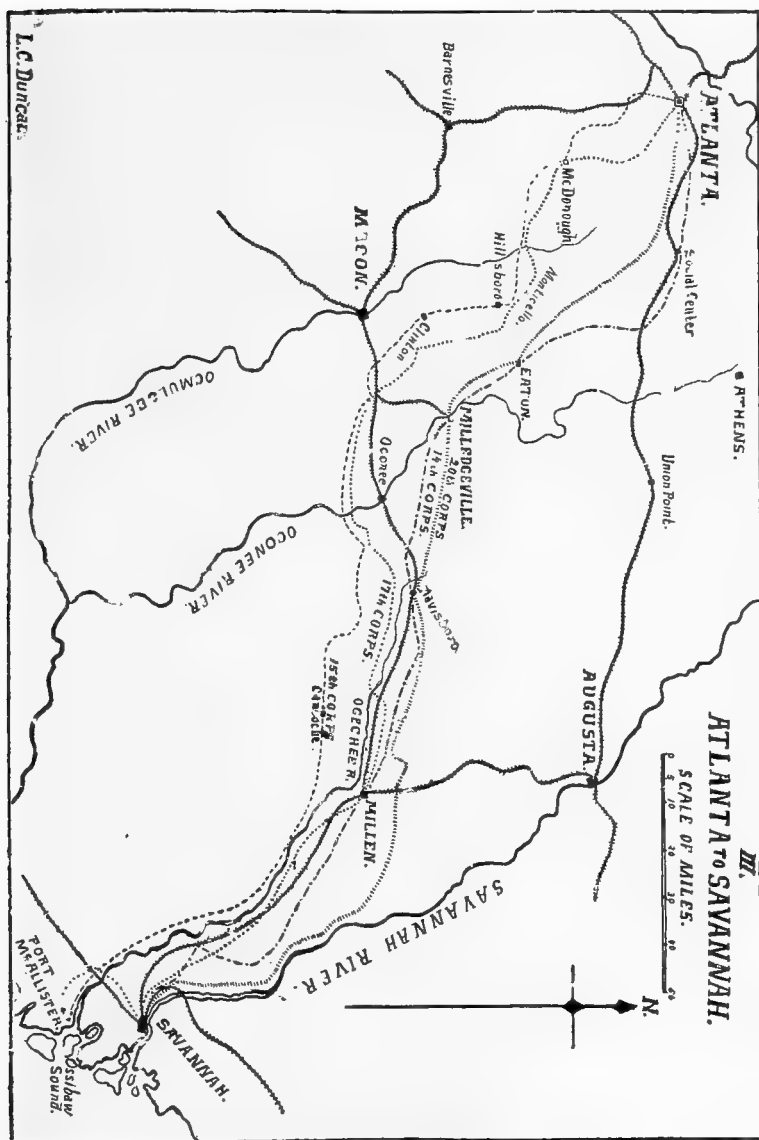
During the march there had been considerable sickness, particularly scurvy, but this disease disappeared when the green corn reached the roasting ear stage, and by the time Atlanta was reached there was no scurvy in the army.

On June 1st a series of rains began which lasted almost without intermission for two weeks. The miserable roads became bottomless mud holes, the troops could move by very short marches only, and the trains could scarcely be moved at all. On June 18th, Sherman wrote Grant, "It is raining as though it had no intention ever to stop." But the army moved slowly on. On June 14th, fighting began on the Kenesaw lines and continued daily until the great unsuccessful assault on June 27. This was the single general frontal attack of the campaign, yet was not nearly so deadly as the assaults at Spottsylvania and Cold Harbor. The number of wounded to be handled in the field hospitals (nineteen in number) was about 2,500. This number could have been handled comfortably under ordinary circumstances. The wounded were being transferred to the hospital at Big Shanty,

but when the attack failed, Sherman again extended to the right and to do this must abandon that place. On the evening of the 27th, he ordered all wounded sent to the rear within twenty-four hours. The field hospitals were then from six to nine miles from the station and the roads were abominable. Doubtless many deaths resulted from moving the desperately wounded in this way. Medical Director Cooper says, "To obey this order it was necessary to avail ourselves of every class of transportation; ambulances and baggage wagons. There were at that time nearly two thousand wounded men in the hospitals of the army (Army of the Cumberland); these had to be carried from six to nine miles over roads rendered extremely rough by the rains and the heavy trains. Knowing that Big Shanty would be uncovered by the time named it was necessary to avail ourselves of every train or box cars returning to the rear. The haste in which the transfer was made caused, I doubt not, much suffering, and I regret to say that in some cases neither proper nor sufficient food was furnished the men on the way to Chattanooga. The trip occupied thirty-six hours or more, though the distance was not more than a hundred miles. The attendants were not reliable and though there was a medical officer to each train he could only enter the cars when the train stopped."

To avoid these evils in the future Surgeon Cooper induced the Sanitary Commission to establish rest stations at Kingston, Resaca, and Dalton. The Commission promptly placed agents at these places and afterwards there was no more lack of food, water, or coffee. This arrangement shows the lack of adequate organization along the line of communications. In fact there was no organization at all. The functions of this division were performed by the service of the front, in so far as they were performed at all.

Few of these wounded were dressed from the time of leaving the field hospitals until arriving at Chattanooga, and many of the wounds became affected with hospital gangrene before reaching the rear. The Medical Director consoled himself with these reflections: "I know that many complaints have been made; it was, however, impossible to do better; the conveniences were few, the wounded many, and the stay-at-the-rear-faultfinding patriots in excess. Everything at our command was made use



of to mitigate the suffering of the troops, and it was only when the Medical Department had no control that the wounded were subject to unnecessary suffering."

On July fourth, Johnston abandoned Kenesaw, and fell back to a position about Marietta. Some slight resistance was made there and at other points further back, but on July ninth, he crossed the Chattahoochee River and retreated to the defences of Atlanta, nine miles away. The clearing hospital was brought up to Marietta, now the advance base, on July tenth, and received the wounded from these small engagements north of the Chattahoochee. The total casualties about Kenesaw Mountain and Marietta were: killed, 1,790; wounded, 5,740.

On July eighteenth the army crossed the Chattahoochee, for the last stage of the campaign, and the clearing hospital was brought forward to Vining's Station, the first station north of the river. Here it remained until the capture of Atlanta. The battles at Peachtree Creek, on July 20, near Decatur, July 22nd, and at Ezra Church, on the 28th, offer nothing of special interest. The wounded were sent to the hospital at Vining's Station and from there evacuated to the rear.

The last combat of the campaign occurred near Jonesboro, on September 1st, and on September 2nd, Atlanta was entered. The wounded from this battle were brought in to Atlanta three days later. Large tent hospitals were now established in Atlanta for all the troops except one division, which used the buildings of the Atlanta Medical College. The wounded and sick were now held at Atlanta except in special cases.

The losses in the battles about Atlanta were: killed, 1,600, wounded 5,915. These were probably the most severe battles of the four months' fighting, yet the losses do not compare with those in Virginia.

The total number of wounded cared for in the hospitals of the Army of the Cumberland was about 15,000, nearly the same as in the single battle at Spottsylvania Courthouse. Of these, one thousand died in the field hospitals, six and two-thirds per cent. If we consider the desperately wounded as ten per cent of the whole number it appears that two-thirds of this class died within a few days, or at most a week.

Of operations there were 1,286 amputations, 302 excisions, and

790 other operations. Chloroform was reported to have been used in 1,255 cases, but the Medical Director says, "This is far below the actual number as it was freely used in all cases where examination of wounds was to be made, and where painful dressings were to be applied. In no case had any injurious effect resulted from its use."

The number of sick received in the hospitals of the Army of the Cumberland during the four months' campaign was 43,153. Of these, 25,184 were sent to the rear, about sixty per cent. The balance were treated in division and clearing hospitals until returned to duty. I am unable to determine what proportion of the wounded was sent to the rear, a piece of information that would be of value.

The wastage of men during active campaign is shown by some figures from the report of the Medical Director of the Second Division, Twentieth Corps. On clearing the division of all sick on May 3rd, there were present for duty, officers and men,

7,043.

By Sept. 1st, the division had lost: killed, 331.

wounded, 1,923.

sick sent to rear, 1,000.

total, 3,254 nearly 50 per

cent.

All the wounded were not sent to the rear; we might assume that forty per cent of the wounded remained with the command, leaving a net loss of about thirty-three and a third per cent, or a rate of one hundred per cent per annum, a loss that would, but for reinforcements, have wiped out the army in one year.

The total losses in the combined armies for the four months were: killed, 4,423; wounded, 22,822; total, 31,687. This is 31.6% of the whole force, much less than Grant lost in the first ten days of his campaign at the same time. Since those lost through sickness would more than balance the wounded that returned to duty it will be seen that the wastage in the whole army was equal to, if not more than, one-third.

In the South African War the wastage in the British forces was at the rate of forty per cent per annum, and from the latest data it was but twenty-four per cent in the Russian armies in 1904-5. The latter figures are in my opinion unreliable and should be corrected to admit forty per cent.

There was a considerable amount of sickness in Sherman's army during this campaign, much more than in his later campaigns to Savannah and through the Carolinas. The number constantly sick cannot well be estimated, but the admission rate was about 2,000, or about double the present peace rate of the army. Scurvy in a mild form was generally prevalent, caused by subsisting on the restricted field ration. In July the Medical Director of the Twenty-third Corps estimated that twenty per cent of the men of his division were affected with this disease. Typhoid also was not absent. A sad incident of the campaign was the death of General Ransom, as related by General Sherman. "He was not well when we started from Atlanta, but he insisted on going along with his command. His symptoms became more aggravated on the march, and when we were encamped near Gaylesville, I visited him, in company with Surgeon John Moore, U. S. Army, who said that the case was one of typhoid fever, which would probably prove fatal. A few days after, viz., on the 28th, he was being carried on a litter towards Rome, and as I rode from Gaylesville to Rome, I passed him by the way and spoke with him, but did not then suppose he was so near his end. The next day, however, his escort reached Rome, bearing his dead body. The officer in charge reported that shortly after I had passed, his symptoms became so much worse that they stopped at a farm house by the roadside, where he died that evening." The idea of a man suffering with typhoid fever being carried in an ambulance for thirteen days, and until his death, is a strange one. It also emphasizes the importance of enforcing general orders in the case of officers with the same regularity as in the case of enlisted men.

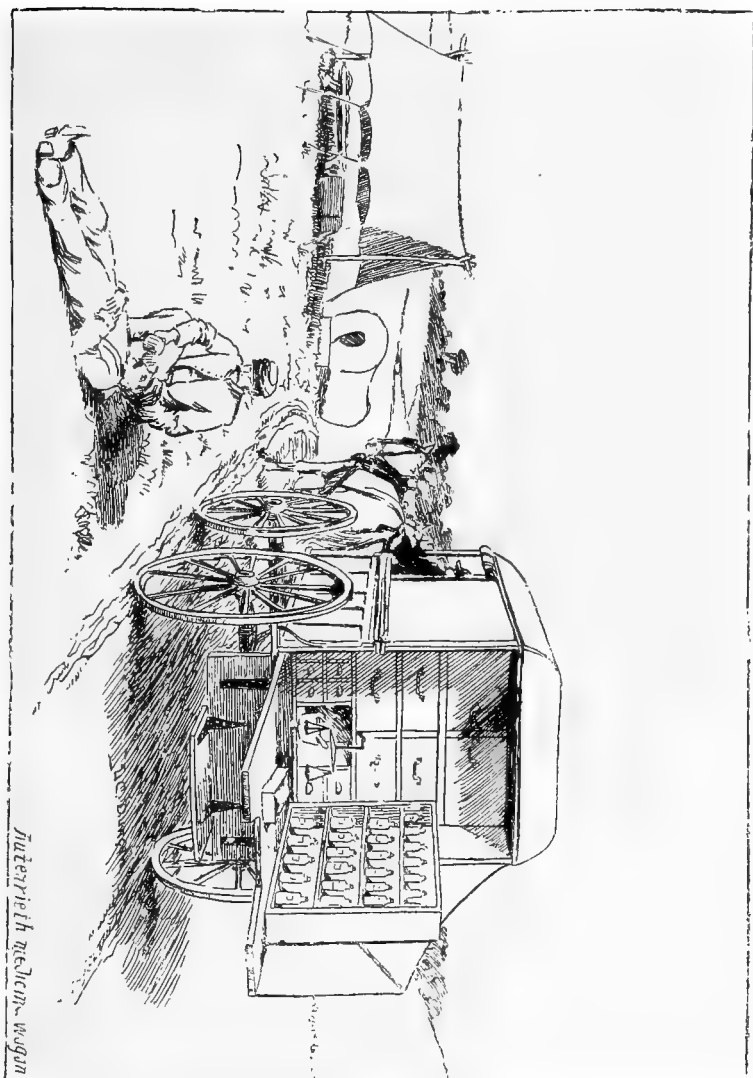
MEDICAL OFFICERS, ATLANTA CAMPAIGN.

Medical Director of the Army, Surgeon E. D. Kittoe, U. S. Army.

Medical Director, Army of the Cumberland, Surgeon Geo. E. Cooper, U. S. Army.

Med. Director, Fourth Corps, Surg. J. Theodore Heard, U.S.V.
 Fourteenth Corps, Surg. C. W. Jones, U.S.V.
 Twentieth Corps, Surg. John W. Foye,
 U. S. V.

Medical Director, Army of the Tennessee, Surg. John Moore, U. S. A.



Artillery medicine wagon

Med. Director, Fifteenth Corps, Surg. C. W. McMillen, U.S.V.
 Sixteenth Corps,
 Seventeenth Corps, Surg. J. H. Boucher,
 U. S. V.

Medical Director, Army of the Ohio, Surg. H. S. Hewitt,
 U. S. V.

Med. Director, Twenty-third Corps, Surg. Edward Shippen,
 U. S. V.
 Cavalry Division, Surg. A. M. Wilder,
 U. S. V.

ATLANTA TO SAVANNAH.

THE ARMY.

When General Sherman left Atlanta on November 15th, 1864, he led what was probably the best large army that ever marched under the United States flag. He had veteran regiments and tried veteran leaders. The law of the survival of the fittest had here its last exemplification.

Regiments of a thousand men were now reduced to little more than three hundred, but three hundred of the kind of men that survive three years of war, three years of heat, cold, dust, mud, fatigue, disease, wounds, and I almost said death; for they had played with death and beat the game, like Kipling's crew of the Bolivar, who "Euchred God Almighty's storm, bluffed the eternal sea."

The weak, the inefficient, the cowardly, the infirm of purpose had long since disappeared. Those who remained were vigorous, hardened veterans who could be depended on to go anywhere and do anything possible to be done by men. As Corse had replied to the French, they were prepared for the effusion of blood whenever it was convenient. They were also prepared to take care of themselves and maintain their health and strength under any and all conditions.

Sherman himself said, "The most extraordinary efforts had been made to purge this army of non-combatants and of sick men, for we knew well that there would be no place of safety except with the army itself; our wagons were loaded with ammunition, provisions, and forage and we could ill afford to haul sick men even in the ambulances. So that all on this exhibit (table of forces) may be assumed to have been able-bodied, ex-

perienced soldiers, well armed, well equipped, and provided as far as human foresight could, with all the essentials of life strength, and vigorous action." A knowledge of these things will enable one to understand the exceptional freedom of this army from disease, and will also explain in part its great superiority over McClellan's forces in the Peninsular Campaign, where the sick numbered 20% of the command.

The army numbered about 55,000 infantry, 5,000 cavalry, and 2,000 artillery; a total of 62,000 men. It consisted of four infantry corps of about 14,000 men each; a cavalry division of two brigades, fourteen regiments; and sixteen four-gun batteries. The four infantry corps were divided into 13 divisions, 36 brigades, and about 173 regiments. The average number in an infantry regiment was 320 men, in a brigade 1,500, and in a division about 4,200. The average number in a regiment of cavalry was 360, in a battery 113 men. There was one officer to each 22 men in the whole army. The average number of officers to a regiment of ten companies was fourteen, allowing little more than colonel, staff, and one officer to each company, of about thirty-two men.

The medical department was fully organized in accordance with the Letterman plan.

IMPEDIMENTA.

Three years of war had also taught the leaders of this army that baggage and supplies are what Cæsar called them, *impedimenta*, a necessary evil to be reduced to the lowest terms. Sherman himself had no hazy ideas on the subject. He believed that tents were a luxury, for camp use only, not to be carried into the field. Before beginning the Atlanta Campaign he issued General Order No. 7 which, among other things, directs: "In no event will tents be carried, or chests, or boxes, or trunks." "Wagons must be reserved for ammunition, cooking utensils, and rations."

Officers could only take such baggage as they could carry on their persons or on led horses, and were to subsist on the same rations as the men. In a letter to Quartermaster General Meigs, Sherman wrote, "I prefer no tents at all for marching troops, * * * Soldiering, as we have been for the past two years, with such trains and impediments, has been a farce."

He had but one wagon for the entire headquarters of the army at that time. Sherman's idea of transportation for an army could hardly be improved on. It was, roughly, as follows:

1. Ammunition wagons, to carry required number of rounds.
2. Supply wagons, with twenty days' ration of hard bread, sugar, coffee, salt, and a little bacon.
3. Beef, on the hoof.
4. Supply wagons to haul a small grain ration for the animals.

An army with trains of this size could march freely. It may have been overdone in some small particulars. One of the chief surgeons complained that all cooking utensils were left behind save only coffee pots, frying pans, and camp kettles, thereby injuring the digestion of the men. I fear he would have difficulty in procuring witnesses to this alleged fact from the State of Georgia.

The train that left Atlanta actually consisted of 2,500 wagons and 600 ambulances. There was no army train; each corps marched on a separate road with its own trains, and was in fact a complete army in itself, except for cavalry. Each corps train consisted of 600 wagons at the beginning, and grew longer as the march progressed. The train, including ambulances, was from four to five miles long. About 20% of the wagons carried ammunition; the balance rations and a little forage.

The average number of horses and mules in the whole army was 30,000. Each gun and caisson had eight horses, each wagon six mules, and each ambulance two horses. The average load for a six-mule wagon was 2,500 pounds. All the animals were in very poor condition at the beginning of the march, but grew better and better as the time passed.

The rations carried on the wagons at the beginning of the march were about as follows:—

- Twenty days' hard bread.
- Forty days' sugar and coffee.
- Eighty days' salt.
- Forty days' beef on the hoof.

The army started with 3,476 cattle and reached Savannah with more than 10,000, being thirty-four days between supply depots. These items make up the essentials of a ration, excepting fresh



vegetables, which were gathered freely from the country, sweet potatoes being the most important component. Corn, wheat, and later rice were gathered in large quantities; mills along the route were taken possession of and run night and day to furnish flour and meal. General Sherman's order read, "The army will forage freely," and it was done much more freely than he intended. Hardly a day of the march was without its reiterated order to restrain irregular looting, but the very regularity of these orders shows that they were ineffective. Yet all this destruction was striking down the Confederacy, and sweet potatoes and turkeys, even mules, are cheaper than blood.

MEDICAL EQUIPMENT.

Now as to medical equipment. Judging by the difficulty experienced today in securing transportation for medical organizations, and by General Sherman's forcible expressions on the subject of baggage, what do you suppose would be allowed by him in the way of medical equipment? The natural impression would be—very little. As a matter of fact General Sherman's army carried about as heavy a medical equipment as our late San Antonio army. When the army left Chattanooga in the Spring each division (about 6,000 men) had a field hospital carried on six wagons. For this campaign the number of wagons was reduced to three, with one medicine wagon. This was done chiefly by cutting out the tents, taking only the tent flies. I shall enumerate the medical equipment of a sample division; the First Division, Twentieth Army Corps. This division had a much smaller equipment than the average of the army. The division consisted of three brigades, fifteen regiments, and at the beginning of the march numbered 5,289 men.

The entire train consisted of 177 wagons, of which 38 carried ammunition. The division hospital was carried in three army wagons and one medicine wagon. The hospital had sixteen tent flies—no tents. The wagons carried a thirty days' supply of the most necessary medical articles.

Each regiment had a pack mule for its medical supplies. The ambulance corps was completely organized in accordance with the Letterman regulation.

The division corps was commanded by a captain, with a lieu-

tenant for each of the three brigades; these officers being detailed from the line to the Quartermaster Department for this purpose. There were thirty two-horse ambulances, one for each 193 men. The ambulance corps numbered about one hundred men. The ambulances carried 200 pounds each of hard bread and meat extracts for the hospital, and these things proved very useful.

As there was an excess of ambulances at the beginning of the march there is no reason why some of them should not have been loaded with supplies at the beginning, knowing that the supplies would be gradually used as the ambulances became needed.

On the basis of this division one of our modern divisions would have 14 wagons and 100 ambulances, instead of 62 wagons and 48 ambulances, as at present. I believe that a happy medium of 24 wagons and 60 ambulances would be better than either. During the latter part of the march three additional wagons were attached to each field hospital for the purpose of carrying the arms and equipment of "light duty" men. The division medical transportation was then measurably greater than at present.

The ambulances seem to have been kept together in one train with the field hospital, but one ambulance followed each regiment. A medical officer and a hospital steward accompanied the ambulance train on the march. The chief surgeon reported that the sick were plentifully supplied by the hospital men foraging. Carriages were taken from the country for the use of the wounded when necessary.

As to tent flies and light equipment, it is to be remembered that the climate of southern Georgia is temperate even in winter. It proved to be fine during nearly the whole of the march, with little rain, and just cool enough to be healthful. No hardships were experienced from lack of tentage or other medical supplies usually carried with armies. The troops reached Savannah in such excellent condition that General Grant was moved to express his gratification on at last seeing an army that could on finishing one campaign immediately begin another, without first recuperating for several months.

THE MARCH.

Next to fighting, marching is perhaps the most important function of armies. The manner of accomplishing a great march is

always instructive as well as interesting. It may be said in the beginning that this march was hindered by no extraordinary obstacles. The difficulties were chiefly three—moving the trains, destroying railways, and gathering supplies. Together they reduced the rate of march to ten or twelve miles per day. But for these distractions, along with road making and bridge building, it seems that the army could easily have marched twenty miles per day. The order of march prescribed for the Fifteenth Corps at the beginning of the march was as follows:—

ADVANCE GUARD.

Second Brigade, less one regiment.
 One battery, without caissons, wagons, or forges.
 One regiment as support to the battery.
 Pioneers, with tool wagon.
 Regimental wagons and ambulances of these organizations.

MAIN BODY.

First Brigade (First Division), each regiment followed by one ammunition wagon, one ambulance, and one regimental supply wagon.

One-half the division supply train—five wagons, infantry ammunition (guarded by one regiment).

Third Brigade, wagons and ambulances as with First Brigade.
 Corps Headquarters train.

Headquarters trains of division and brigades (First Division).
 Ambulance and hospital train, First Division.

One-half the division supply train; remainder of ordnance train (guarded by one regiment).

One regiment of Third Brigade.

SECOND DIVISION.

First Brigade, ambulance and two wagons following each regiment.

One-third of all trains.

Second Brigade, same order.

Third Brigade, same order.

Artillery Brigade and train.

THIRD DIVISION.

One regiment of Second Brigade.

Pioneer troops with tool wagon.

Remainder of Second Brigade.
 Two regiments of First Brigade.
 Ammunition train.
 Division Headquarters train and provost guard.
 Division supply train.
 Ambulance and hospital train.
 One regiment on flanks of trains.
 Two regiments of First Brigade.

General Sherman's original order provided that one ambulance should follow each regiment with the remaining ambulances following the brigades.

This order was followed in some cases, but in most of the divisions after providing each regiment with an ambulance, the remainder were collected in a division train, usually placed near the middle of the division.

The order of march is given at length in order to show the place of the ambulances and hospitals in the column.

The regular day's march was fixed at a maximum of fifteen miles and was more frequently not attained than exceeded. The men could have easily marched farther, but the trains could not keep up, especially at the beginning when the animals were in very poor condition. Again it was the work of building bridges or destroying railways. It was a common occurrence to assign to a brigade the destruction of two miles of railway, as a beginning of the day's work, after which the march was to be made.

Sherman always claimed that the cavalry did not do this work effectively and saw that his infantry left no rail untwisted. There was also bridging and road work, but nothing to compare with what was done in the Carolinas later. A table of the marches of the Twentieth Corps shows at a glance the distances covered by that part of the army. The other corps marched by different roads, but on the whole made equivalent marches.

MARCHES OF THE TWENTIETH CORPS.

November 15th,	16 miles,	weather fair
16th,	8 "	" "
17th,	16 "	" "
18th,	15 "	" "
19th,	7 "	rainy
20th,	12 "	"
21st,	13 "	"

	22nd,	15	"	weather fair
	23rd,	rested	in camp	
	24th,	13	miles,	" "
	25th,	8	"	" "
	26th,	12	"	" "
	27th,	15	"	" "
	28th,	12	"	" "
	29th,	9	"	" "
	30th,	10	"	" "
December	1st,	13	"	" "
	2nd,	11	"	" "
	3rd,	15	"	" "
	4th,	15	"	" "
	5th,	6	"	" "
	6th,	13	"	rainy
	7th,	10	"	"
	8th,	10	"	weather fair
	9th,	9	"	" "
	10th,	10	"	" "

It will be seen that in the twenty-six days from the time this corps left Atlanta until it arrived in front of Savannah the troops had but one day's rest, and, if I remember correctly, two of the divisions were busy that day. In the twenty-five marching days the corps covered 293 miles, not quite twelve miles per day. This looks like rather poor marching, but considering all other work done is very good marching indeed.

General Sherman prescribed that the column should start at seven A. M., and it frequently started earlier. He says they generally got into camp by noon, but this applies mainly to the leading division. The rear division, as usual, had the worst of it, often not getting into camp until long after dark and sometimes not till next morning. To remedy this state of affairs, Circular No. 14 of the Fifteenth Corps prescribed that the leading division should not march over two miles per hour, allowing a rest of five or ten minutes at the end of each hour. It was also prescribed in army orders that the trains should have right of way on the roads, the men marching at the sides of the road or in the fields if necessary. The immense number of animals with the army at the end of the march shows that an unusual proportion of the troops were mounted. It was a common occurrence to take advantage of the crossing of a river to dismount all unauthorized riders, and

when the cavalry became short of horses the general ordered 800 turned over to them *by the infantry*.

MEDICAL ARRANGEMENTS OF THE MARCH.

General Sherman states in his Memoirs that there were about six hundred ambulances with the army—one to each 103 men. Each division had from thirty to forty ambulances, but it must be remembered that the regiments were very small. The regiments required nearly half the ambulances for regimental purposes. The quota of one ambulance to a regiment was alone greater than our present allowance of one to four hundred men.

The fifteen to twenty-five ambulances remaining formed the ambulance train of the division. The statistics of sick and wounded on the march show that the number of ambulances was sufficient.

* Asst. Surgeon David L. Huntington, U. S. A., Acting Medical Director of the Army of the Tennessee (right wing), reported that the average percentage of men unfit for duty in this half of the army was 1.9. The percentage for the whole army may be assumed to be the same, or approximately 1,200 men constantly sick during the march. Six hundred ambulances would of course carry this number easily. Considering the slightly wounded and sick it would appear that not more than one-half the ambulances were necessarily used.

Some of the wounded were carried considerable distances. The principal fight of the march occurred near Macon on November 22nd. The wounded, about forty in number, were carried along the remaining 190 miles to Savannah, reaching there eighteen days later. General Walcutt, the hero of this combat, was wounded in the leg and rode the balance of the way in a carriage.

Medical Director Moore said later: "As far as I am informed there is no case of sick or wounded men being left on the way. When the army cast loose from everything in the rear, on the campaign from Atlanta to Savannah, probably one of the gravest objections to it in the minds of both officers and men, was the dread of being left in case of sickness, in the hands of their enemies. But neither on that campaign nor on this (the Carolinas) has this fear been realized, except in the case of two men from the right wing who had compound fractures of the thigh,

and were left in friendly hands in Georgia." General Sherman believed, whether correctly or not, that many people in Georgia were growing tired of the Confederacy and were well disposed toward the United States Government.

HEALTH OF THE COMMAND.

The health of the army was excellent throughout the march, as appears from the constantly sick rate of 1.9% in the right wing, which is less than half that in the United States Army today. To be sure, all sick were weeded out at the beginning. That this clearing out was thorough is shown by the fact that from the right wing there were thus eliminated 784 men, or 2.6% of that army.

All external conditions of roads, terrain, climate, and season were favorable. The constant movement rendered ordinary camp sanitation easy and the abundance and variety of food gathered from the country prevented all diseases of nutrition; scurvy was very common during the Civil War.

The constant occupation of the men no doubt contributed to their health, as well as their confidence of success and good spirits.

The deaths from disease were at the rate of about twelve per annum per thousand; a low rate for any time, and especially low for that time. I do not believe that any large army has ever had so low a rate as this either before or since. The justly lauded German Army had a death rate of eighteen per thousand in the Franco-Prussian War.

Certain diseases appeared but apparently did not spread. There was measles in Atlanta when the march began and a case of varioloid appeared on the third day. Immediately all not protected were vaccinated—showing that vaccine material was carried in the medical supplies.

I can find records of very few men left behind. Two men with broken thighs were of necessity left, and Captain Norton, of the 10th Ohio Cavalry, having been severely wounded, was left near Waynesborough, on December 4th.

General Kilpatrick left a corporal with him, bearing a note to General Wheeler. The captain died soon afterwards and Wheeler returned the corporal. This amenity of war was accompanied by some rather sharp correspondence.

That the general officers of the army were not unmindful of the health of their men will be apparent from the following order of General Osterhaus, commanding the Fifteenth Corps:

Hdqrs. Fifteenth Army Corps,
Opposite No. 3, Ga., December 6, 1864.

Special Orders, No. 191.

I. Division commanders will proceed at once to collect all milk cows in vicinity of their respective commands, and will retain possession of the same until the army arrives at its destination, when they will be turned over to the medical department for the benefit of the sick and wounded.

II. The following are the orders for the movements of the corps tomorrow, * * *

By order of Maj. Gen. P. Joseph Osterhaus.

L. F. WHITEHEAD,
Adjt. General

The Medical and Surgical history of the War gives no report of the Medical Director of the Army in this campaign. It does give one short letter from him to the Surgeon General. I believe his ability may be judged from this letter, and think it worth repeating:

Atlanta, Georgia, November 10th, 1864.

SIR: I have been ordered by General Sherman to report to him as medical director of the entire army under his command. In three days the army will move into the interior of the State, having for its objective point some important town on the Atlantic seaboard. Transportation has been reduced to the minimum, and in consequence, only a limited amount of supplies can be carried on the march. In view of the probability of those on hand being exhausted when the objective point is reached, I respectfully suggest that three months' medical supplies for sixty thousand men, as well as the fixtures for fitting up a hospital of five thousand beds be held in readiness to be shipped without delay, and without further requisition, to Savannah, or such other point as the army may make its appearance on the sea-

board. Our movements will probably be learned through rebel papers.

Very respectfully your obedient servant,

JOHN MOORE,

*Surgeon, U. S. A., Medical Director, Department of
the Tennessee.*

To the Surgeon General U. S. Army.

When the army reached Savannah only about one-tenth of these beds were actually needed, yet their provision was an act of the broadest wisdom. On reading the request for this hospital and supplies the question will arise—why was Montauk Point?

COMMENTS.

For purposes of comparison, Sherman's army may be considered as composed of four divisions. His infantry corps were almost precisely equal to our modern infantry divisions. The cavalry was not attached; the artillery contingent was decidedly less (about one-third); engineer and signal troops were mainly detailed from the infantry. In spite of all orders there seem to have been civilians with the army, and the hospital and ambulance troops were not included in the strength as given.

If we call Sherman's corps divisions, his divisions brigades, and his brigades regiments, we have a ready basis of comparison with our modern army. On this basis he should have had sixteen field hospitals and sixteen ambulance companies. He had fourteen field hospitals. Instead of the 192 ambulances which our regulations would give him, he had by his own statement 600. As he expected no severe fighting the light field hospitals were sufficient, and were eminently suited to the campaign. The ambulances proved ample in numbers. I am inclined to doubt that the army had so many ambulances at the beginning of the march, and think that the very large number, six hundred, was reached toward the end when many miscellaneous light vehicles had been added to the ambulance train. The only division for which accurate figures are available had not nearly so large a quota of ambulances.

A thing especially notable in the medical arrangements of this march is that the preparation fitted the case with remarkable

accuracy. Flies instead of tents, hospital wagon train cut in two, ambulance train largely increased, supplies carried on excess ambulances, light vehicles impressed as needed, food for the hospitals secured by foraging; all these things bespeak a versatile medical staff, that could adapt itself to circumstances, and would have succeeded under any conditions, if success were humanly possible. We must not forget that it was an army of picked men, picked by the most impartial of all inspectors, Darwin's law.

The mental influence, the morale, must also not be overlooked. In no other campaign of the war did it play such an important part in contributing to the success of the Union Army. Surgeon Moore in giving reasons for the health of the command, in a later report, does not, in the all too common manner, claim everything for the effects of his own measures, but says: "The pure air, freedom from drunkenness and other vices inseparable from garrison life, but most of all the novelty and excitement of an active campaign, on which every man knows that important results depend, are among the causes of better health in the field. And again, the variety and abundance of food, and possibly the irregular and predatory method of obtaining it, may have something to do with better sanitary conditions; and finally, but not least important, was that they were led by a general in whom they have unlimited confidence."

The thousands that dropped from the ranks during McCellan's retreat through the swamps of the Chickahominy had no counterpart in the swamps of the Carolinas. Not even wading swamps by day and lying in the mud by night could down these iron veterans. If as Napoleon said, the moral is to the physical as three to one, we have here an underlying cause for the freedom from disease of this army.

MEDICAL OFFICERS OF GENERAL SHERMAN'S ARMY ON THE CAMPAIGN FROM ATLANTA TO SAVANNAH.

Medical Director of the Army:

Surgeon John Moore, U. S. Army.

Medical Inspector:

Surgeon E. D. Kittoe, U. S. Army.

Medical Director, Right Wing:

Asst. Surgeon David L. Huntington, U. S. Army.

- M. D. 15th Corps:
 Surgeon Robert Niccolls, U. S. Vols.
- M. D. 17th Corps:
 Surgeon J. H. Boucher, U. S. Vols.
- Medical Director Left Wing:
- M. D. 14th Corps:
 Surgeon W. C. Daniels, U. S. Vols.
- M. D. 20th Corps:
 Surgeon Henry Q. Gill, U. S. Army.
- M. D. Cavalry Division:
 Surgeon B. Taylor Wise, U. S. Vols.

Seaman Prize Essay.

THE COMPARATIVE MORTALITY OF DISEASE AND BATTLE CASUALTIES IN THE HISTORIC WARS OF THE WORLD.

BY CAPTAIN LOUIS C. DUNCAN, MEDICAL CORPS.

INTRODUCTORY.

THE relation of the number of deaths caused by the enemy in war to the number caused by disease is so striking as to have claimed attention since statistics came into use. That disease, a thing not naturally associated in the mind with war, should cause more deaths than bullets, always expected, strikes the mind with a peculiar force and demands an explanation. Actually there is little relation between the two classes of deaths. One may make a broad generalization and say that they vary inversely; the rugged, hard-fighting army generally has a good health report; and conversely, the sickly army is not able to meet the enemy, or does not face him with the same resolution and endure the same losses. Yet this rule will be often found honored in the breach.

In general, losses in battle depend on many things beside health, and disease and death therefrom on many things other than bravery. The relation between battle losses and losses from disease is not *per se* of great importance; the important thing about both is, to what extent are they dependent on avoidable causes? When disease losses are far greater than those of battle, it is self evident that the greatest losses are in the preventive class; while if battle losses are greater there is not so much

ground for complaint, since they are expected and largely not to be avoided.

As to prevention, losses from disease offer by far the most promising field, since the frightful death records of past armies were chiefly occasioned by infectious and preventive diseases, many of which have now been entirely banished from the armies of civilized nations. But battle losses are not altogether unavoidable, for they are composed of two categories: the killed outright and those who die of wounds. The first are beyond reach, but the second may in large proportion be saved. One hundred and fifty years ago one-fourth or more of the wounded died; to-day in well organized armies no more than one-sixteenth die, though many are now picked up promptly who formerly were left to perish on the field and counted with the dead.

A study of the two classes of mortality in war would be interesting for itself alone, simply to show the losses from disease in contrast with the battle losses, in various wars at different times in the world's history. The record of such a study, however, would consist largely of statistical tables, resembling a nautical almanac or a table of logarithms, containing much valuable information but dry and uninteresting, and not prepared for application. I take it that something more is contemplated in this subject than a bare presentation of statistical tables. Death losses in war are natural phenomena; they have causes that are discernible, and afford lessons applicable to the medico-military problems of to-day. The great captains of the past often saw their armies melt away with disease and apparent victory slip from their grasp; why? And, how can similar disaster be prevented to-day? How and to what extent have the losses in modern times been reduced, and what has brought about the reduction? These are the important questions evoked; these are the flesh and blood of the subject; the bare figures are but the dry bones.

Losses in battle are of less importance to the medical man, for they are largely not preventible. They form a part of the subject chiefly because they serve as an exceedingly striking method of presenting disease losses and contrasting those of different campaigns. But in comparing the two classes of losses many people fall into a great error; they seem to imagine that battle losses form a constant, a fixed value by which all disease

losses may be measured, forgetting that battle losses vary almost as much as disease. Homer Lea fell into this pitfall and evolved the ridiculously false idea that the Americans in the Spanish War lost fifty-six times as many men by disease, proportionately, as the Japanese in their recent war. He reached this most absurd conclusion by calculating that the Americans lost fourteen times as many men by disease as in battle; while the Japanese lost but one-fourth as many. Had the deaths from bullets been precisely the same in both armies and his figures correct (and they were not), his conclusion would have been just. Actually it was a most simple blunder, for the disease losses of the two armies were little different.

A moment's thought will convince anyone that battle losses are never the same, any more than disease losses, and therefore afford no solid ground for reasoning. In the Spanish War there were but a few small conflicts, and less than one-tenth the army was ever engaged. In the late Russian War there were frequent and most sanguinary battles in which practically the entire Japanese Army took part, not once but many times. As a matter of fact, the Japanese lost ten times as many men proportionately in battle as the Americans in 1898.

There is but one method of comparing losses from different causes, in different places, and at different times. That is to reduce all losses to a basis of 1,000 men in service one year. Throughout this essay the writer has uniformly figured battle losses as so many per thousand per annum, and disease losses in the same manner. In this way, and only in this way, can one war be logically compared with another, one age with another, or one part of a given campaign with another. To be sure, different campaigns can never be accurately compared, but extreme accuracy is unnecessary. The general trend of losses, the proportion that are preventible, the influence if any of the progress and utilization of sanitary science; these are the things that may be deduced by comparison, and the important things.

For the purpose of this study I have thought it convenient, and not illogical, to divide the history of armies into three periods. First there was a Presanitary Era, lasting from the earliest times to the end of the seventeenth century; second, a period of Medical Organization, lasting to about 1810; and third, a Sanitary Era, lasting to the present time.

PRE-MEDICAL ERA, TO THE YEAR 1700.

The history of the sanitary service of armies is unfortunately a short one; the time since the keeping of accurate statistical records of the sick and wounded began is still shorter. Of all the armies that have marched the highways of the world since the first armed force went out to give battle, no records of the human wrecks remain save for those of the last one and a half centuries; and no one attempted to accurately record the mortality of armies until a short one hundred years ago. We shall find surgeons following the armies of Greece and Rome, and in later times those military expeditions known as the crusades; surgeons were apportioned to troops from early in the seventeenth century; military hospitals were used a little later, and the French Army had a regular medical service early in the eighteenth century; but statistics, beyond rough estimates of the battle losses, were practically unknown before the end of that century, about one hundred years ago.

So all the years to the time of Marlborough and Turenne may be passed over very quickly. As to the medical service of Grecian and Roman armies it is unnecessary to speak; the extensive researches of Percy and Willaume have established beyond a doubt that the Greeks and Romans had neither civil nor military hospitals. No mention is made of anything like a sanitary service by any ancient writer. The only care given to the sick or wounded in those days was such as relatives or companions could afford. The noble and wealthy leaders had their personal surgeons; the poor soldiers, if friendless, had little or no care. Lucan's lines on the brutality of Marius very justly represent the background of a typical battle scene of that time:

"Nobilitas cum plebe perit: lateque vagatur
 Ensis: et a nullo revocatum est pectore ferrum."

The modern army came into existence with the Crusades. Before that time, and after the fall of the Roman Empire, there had been in Europe only petty armies or large irregular hordes. But after the Crusades, and more particularly after the invention of gunpowder, modern armies were formed and began to take on the shape they bear to-day. These armies at first had no medical service whatever, and no doctors or surgeons except those in the service of high ranking officers: the king, nobles and others. In France, until the reign of Louis XIII, there were

surgeons for officers but none for soldiers. When Ambroise Pare came to the siege of Metz in 1575, it was as surgeon to the Duke of Guise; and if any soldier received his ministrations it was some chance favorite. For the common soldier there was neither surgeon nor hospital. As De la Noue sadly remarked, the only bed of the sick or dying soldier was the ditch in which he might have fallen; "*leur lit d'honneur est une fosse où une harquebusade les aura renverses.*"

Grose says, "Immediately after a battle the meaner sort of soldiers, whose wounds required considerable time to cure, were dismissed with a small gift sufficient to carry them home." Yet armies always had some sort of pretended doctors, even the American Indian having his medicine man. The armies of the Emperor Charles V, in the middle of the sixteenth century, had no medical service, but were followed by a swarm of ignorant empirics, charlatans and quacks, who sold at a high price elixirs, balsams and even charms. When Charles the Bold of Burgundy, the first to attach surgeons to *troops* instead of *officers*, fitted out his army of 20,000 men with a surgeon to each regiment of 800, all these surgeons were merely barbers, as related by Malgaigne. The study of surgery was not introduced into the universities of France until the fourteenth century, and as late as the seventeenth the surgeon was a low fellow, far inferior in status to the physician.

The first surgeons supplied to the British Army were fifty-seven who accompanied an expedition of 16,000 men to St. Quintin in 1557. Thomas Gales, who served in this expedition and afterwards became a celebrated London practitioner, wrote of these "surgeons": "When I was at the wars there was a great rabblement there that took upon them to be surgeons. Some were sow-gelders and horse-gelders, with tinkers and cobblers." These pretended surgeons, commonly known as "dog leeches," used for cures such trumpery as grease, shoemakers' wax and the rust of old pans, wherewith they made a noble salve. One may imagine the lot of the wounded in the hands of such quacks and fakers.

As to hospitals they were in no better case. Hospitals also came into use at the time of the Crusades; none are mentioned before 1100. But for many years, in the hands of the monks, they were only sheltering places for travelers and mendicants. Gradually the monks learned a little medicine from the Jews, who had received it from the Arabs. These so-called hospitals

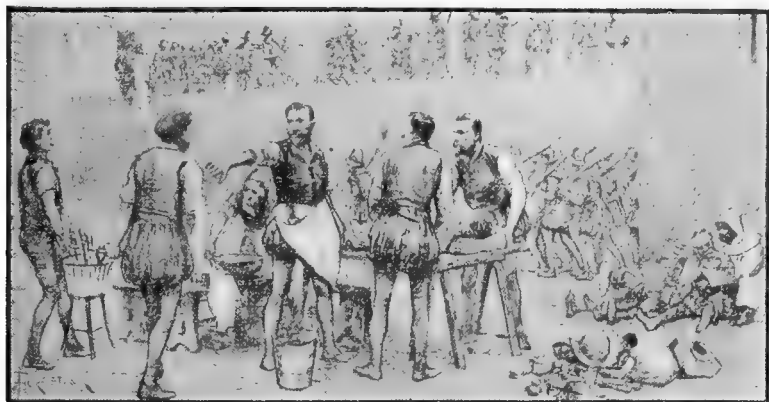
were not for soldiers, but later did take on the functions of military hospitals. The sick soldier, when he began to receive a little attention from barber surgeons, was treated in his quarters—if he had any; if seriously ill he was dismissed to his home or to die.

In Rymer's *Foedora*, among the instructions sent to Sir Thomas Leighton with the English Army in Flanders, in 1593, is this passage: "Where it appeareth that the one halfe or more of the nomber that weare there in Paye are sick and ympotente and unable to serve, it shall be considered how many of them may likely be recovered in short tyme, and those to be reteyned; as for the others, whose infermities are such as there is no lykelyhood of their recovery in short tyme, order is to be given to discharge the Queen of her Paye, and to return them to their own country." That is, when useless they were to be cast aside. Sir John Smythe, in "*Certain Discourses*," 1590, relates how these sick were returned to England: "Great numbers of such, their sick and starved soldiers, by order of the Earl of Leicester, were in Flanders embarked and transported into Essex and Kent, and other parts of England, to recover health; of which aforesaid great numbers of miserable and pitiful ghosts, or rather shadows of men, the Essex and Kentish carters can testify; of which scarcely the fortieth man escaped with his life." This passage, besides affording a picture of the heartlessness of the times, is one of the first to show how the sick suffered and died in great numbers, and largely uncared for. This moral darkness was at the very time when Sir Philip Sidney was setting his immortal example of charity and self abnegation.

But these things were passing. The establishment of military hospitals and some sort of a rudimentary medical service for armies was begun as early as the latter part of the sixteenth century. Pare had hospitals, and there are beautiful prints showing him putting away the hæmostatic hot irons. An ordinance of Henry IV at the Siege of Amiens in 1597, considered a hospital, and one was actually established by Sully. No more were heard of until the time of the great Cardinal, Richelieu, when hospitals were established in the rear of certain armies. By this time all the cities of Europe had hospitals, and it was customary to send part of the wounded to near-by cities. Ecclesiastical hospitals were utilized in the same manner. Military hospitals, however, as permanent institutions, did not exist. The sick and wounded were largely left to private and public charity;

and this condition existed until near the close of the reign of Louis XIV. That monarch made use of temporary hospitals in the rear of his armies; Voltaire gives a glowing account of the hospitals at the Siege of Lille in 1707. He also established permanent hospitals.

In England at this time the sick were generally billeted in houses. Both Evelyn and Pepys speak of the wretched condition of the seamen wounded in the Dutch War, 1664-68, and the difficulty of caring for them. For example, Pepys, October 5, 1665: "To Mr. Evelyns to discourse of our confounded business of prisoners and sick and wounded seamen, wherein he and we are so much put out of order." Evelyn, in 1666, proposed a plan for an "Infermerie," and the Merry Monarch gave it his



• AMBROISE PARE DISCARDING THE USE OF CAUTERIES IN AMPUTATIONS •

gracious approbation; but Evelyn sadly remarks, "I saw no money."

The great Hotel Dieu and the principal communal hospitals of France owe their foundation to an edict of Louis XIV, of date 1693. These hospitals for years were for "poor mendicants" and the like, not for the better or even middle classes. The first permanent military hospital was the Hotel des Invalides, founded by royal edict in 1674, rather as a home for disabled soldiers than as a hospital for acute cases. The English military hospital at Chelsea was founded in 1682; the hospital for seamen at Greenwich in 1695. Other military hospitals were established on the continent, and by 1758 there were nearly a hundred in France alone. They were as a rule temporary institutions at the bases of operations, always insufficient, and

dependent for supplementary aid on the civil and ecclesiastical hospitals. The medical officers of these had almost no authority, the control being in the hands of a Commissary of Subsistence. One may judge somewhat of the quality of the hospitals by the statement that one bed always contained two patients—if not more. In the Hotel Dieu six patients were sometimes crowded into a bed four and one-half feet wide.

Field Hospitals, hospitals ambulantes, or ambulances, were introduced by Cardinal Richelieu about 1639. The first were established in towns in rear of the army; but there was also a small establishment of Jesuits, with nurses and cooks, accompanying the army for the purpose of feeding and attending those who did not choose to go to the hospital. This, the first real field-hospital service, was composed of "six Jesuits; viz., four priests and two lay brothers; together with a cook and five aids, a surgeon and an apothecary." "The said Jesuits shall have two two-wheel carts, provisions and six sheep a day. The said Jesuits are particularly charged with the consciences of the sick." This was an infirmary rather than a hospital; it had no tentage, and the treatment must have been "in quarters." During the reign of Louis XIV this small hospital service was greatly increased and improved by the addition of surgeons, remedies, instruments and appliances of every sort; but tents were unknown, likewise ambulance wagons for carrying the sick. The Franciscans were at that time charged with the service of the ambulances.

The French term ambulance, generally used on the continent, comes from the verb *ambulare*, to march; and is equivalent to the old English term, marching hospital, or ambulant hospital. It corresponds roughly with our term, field-hospital, but in Larrey's time included ambulance wagons. The English first provided it with tents, about 1690.

Of the exact losses to armies from disease in the middle ages we have no record. That they were greater than the battle losses there can be no doubt. The average death rate of civil communities was then as high as battle losses in any but the most sanguinary wars. That of soldiers in home garrisons in the piping time of peace as high as that which occasioned such surprise and indignation in 1898. A greater proportion of men in armies died in time of peace before the eighteenth century than during the wars of the past fifty years; and as far as we have records the peace rates have always been increased about

five fold in time of war. Battle losses, on the contrary, while probably as great in single combats, were on the whole much less; for armies waged war in a leisurely manner, usually going into quarters during winter and campaigning during but six months of the year. In the sixteenth century we read of the Hundred Years War, and in the seventeenth of the Thirty Years War, with but few great battles. No such wars occur to-day. Frederick the Great waged a war for seven years; Bismarck and von Moltke annihilated the military power of France in seven months. No war of ancient times was pushed with the relentless swiftness of that campaign.

Battle losses were on the whole less than now, and losses from disease far greater, but no exact or even approximate figures can be given. Examples, however, are not wanting. Passing over the not infrequent destruction of ancient armies by pestilence, and the ruin of several of the Crusades by famine and disease, a brief mention will be made of that terrible struggle known as the Thirty Years War. This war, lasting from 1618 to 1648, converted all Central Europe into a maelstrom of fire, sword, famine and pestilence; even the true plague added to the horror of that time. Less than sixty battles and combats of every kind were fought. In many the loss was trifling; and in one of the greatest and most decisive, the Battle of the White Mountain, but a few hundred were killed. No writer has ever adequately pictured the terrific effect of want, suffering and disease on both people and armies during this period. Army after army, magnificent in appointment, perfect in discipline, heroic in valor, plunged into that vortex which rejected but a few wrecks of what it had absorbed. Army after army from Sweden and all the Protestant states, and from the Empire and Catholic states, filled up the chasm made by battle, want and disease, but chiefly by disease. More than once, when two armies sat down to observe each other, they suffered far more from the filth of their camps and consequent maladies than if they had fought the most murderous battles. Schiller notes that when the great Swedish leader comes on the field he resolves to change the method of warfare, and

“the king resolves

To storm the camp, and lead his wasted legions,
Who daily fall by famine and by plague,
To quicker death than hunger and disease.”

The perils of battle were less than those of a camp where the army was wasting to nothing by disease. And when that valiant army had fought its way from the shores of the Baltic to the very gates of Vienna, and was only held in check by the fortress of Brunn, disease, plague, once more appeared and accomplished what all the armies of the Empire could not. Whole regiments disappeared; in one case not a man was left of a large organization; the general, Torstenson, was compelled to leave the field, the siege was raised and the campaign lost.

Such was the unchecked course of disease in the seventeenth century, subject to no law or hindrance save that of fate or chance. Yet there were hopeful signs; surgeons and hospitals were appearing in armies, though as yet exerting little or no influence in lessening disease. That influence was to appear later and it was a hopeful sign when the true plague disappeared from European armies in this century.

During the ages when constant warfare and its mate, the ever-present epidemic, wiped out whole peoples, the average span of life was about twelve years. Since the world began more lives have been sacrificed through ignorance than through the combined losses of war, slavery, torture, assassination and religious bigotry. The average length of life in the sixteenth century was from eighteen to twenty years; in the eighteenth it was about thirty, in the nineteenth the average increased to forty, and is now reckoned at from forty-five to fifty. A death-rate of twenty-five per thousand in the Spanish-American War shocked the country. The death rate of London in the time of Marlborough was fifty-five.

ERA OF MEDICAL ORGANIZATION, 1700 TO 1810.

The utilization of hospitals and the institution of some sort of field-hospitals or dispensaries was naturally accompanied by a medical service. Surgeons, at first in personal attendance on certain officers, were later assigned to troops, and still later organized into a regular corps or service. Gustavus Adolphus, 1630-32, was the first great general to regularly provide his army with surgeons. During his campaigns in the Thirty Years' War he assigned four surgeons to each regiment of one to two thousand men. In England regimental surgeons date from the permanent organization of regiments; that is, from about 1660; but surgeons were employed irregularly much

earlier. In France surgeons were first assigned to regiments during the reign of Louis XIII. In 1620 King James provided for an expeditionary force of 30,000 men, a chief surgeon for each regiment of 1800, and a surgeon for each company of 150; but no allotment of funds was made for either medicines or hospitals. These early army surgeons were expected to furnish their own medicines and treat their patients anywhere, when not billeted or placed in established civil hospitals. In 1639 a regimental surgeon ranked with a chaplain and received four shillings a day. In Germany and Italy it was then customary to allow a surgeon of some sort to each troop or company. Surgeons were far more plentiful than now; but with their general ignorance, lack of organization, wretched care of the sick and wounded, and total lack of sanitary knowledge, their numbers in no way compensated for the usual rabble of runagate surgeons and nostrum venders.

The body of surgeons did not constitute a real medical service in any army before the end of the seventeenth century. In France as early as 1708 the land forces had a regular medical corps, numbering 196 in all, with chief surgeons, chief physicians, assistants and regimental surgeons. In 1746-47, under the administration of Count d'Argenson, this body suddenly became a complete service, with minutely systematized regulations and a hierarchy of officials. The hospitals were divided into fixed, sedentary and ambulant, and the sphere of each was clearly defined by the General Regulations of January 1, 1747. The operation of these hospitals was directed in great detail by an order of forty-two paragraphs. There was a complete medical staff for the three classes of hospitals, which correspond closely to our modern base, evacuation and field-hospitals. These field-hospitals, however, carried no tentage; in all the accounts, descriptions, directions and regulations of French field-hospitals then, there was no mention of tents.

The medical service of 1747 remained the medical service of the French Army, with little essential change, until the war of 1870-71. It is generally supposed that Larrey introduced ambulant hospitals, but he did not originate them. Such hospitals had existed for nearly a hundred years when he placed his *ambulance volante* in operation in 1797. What he did was to improve the existing hospital and give it light transportation. Before his time the ambulance reached the field a day or two after the battle; he gave it light equipment and wagons, and had

it on the field when the battle began. The great defect of the French Medical Service then, and even in 1870, was that it had neither independence nor authority: it was but a subordinate part of the Intendance or Supply Department; it was stilled and emasculated by the careful withholding of all power.

In the British Army there was, by 1700, a tolerably complete medical service. Under the Stuarts the army, like all else, fell into disorganization, but during the reign of William of Orange it was whipped into shape again and became the splendid force which, a few years later under Marlborough, won such high renown on all the fields of Europe, from the Low Countries to the Danube. After the Irish War of 1689-90 the medical



1792.

service was entirely reorganized. There was provided a surgeon and assistant for each regiment, a base hospital in some town in the rear, while following the army was a "marching hospital," with twelve cars for carrying the sick, eight wagons for supplies, and twenty-five tents for 200 patients. The medical service of the army at that time plainly foreshadowed the service of to-day. The marching hospital, however, was soon lost sight of, and not seen again for nearly a hundred years. By 1745 the medical service was in good state for the times, as may be learned by reading the admirable observations of Sir John Pringle, who was Medical Inspector of the Army in Flanders and on the Rhine. At that time, and until recent years, the principal field-hospital was the regimental hospital. There was

no permanent field-hospital as in the French Army, but in the Peninsular War very temporary field-hospitals were established after a battle. The American Army, a natural descendant of the British Army, followed the same plan to the Civil War, and even throughout that war, but toward the end the field-hospitals tended to become more permanent. The British Service, like the American, has had the advantage from an early date of a considerable degree of independence, a factor which has contributed more than any other to the efficiency of both.

Yet all these contributions to the care of the sick and wounded lessened mortality but little; in fact it was generally believed that the hospitals increased the mortality. Pringle, in enumerating the causes of mortality in war, named hospitals as an important factor, and McGrigor in 1816 quoted the passage approvingly. The hospitals of Europe until the nineteenth century were little more than the name indicates—shelter for the helpless sick—in which they died by hundreds. In these hospitals, where two, four, or even six patients were crowded into one bed, where ventilation was unknown, and each was subject to the contagions and infections of all the others, the food poor and the treatment too often quackish, death was ever present. Turpin de Crisse declared that he saw in the wars from 1731 to 1741 vastly more men die in the hospitals for lack of care than lose their lives in combat, and he declared, "Military hospitals are an unfathomable gulf, the source of their horrors, appears to be inexhaustible." Hospitals were in fact breeding places of disease; especially of typhus or *hospital fever*, as well as of typhoid, dysentery as malignant as any of the tropics, purulent infections, erysipelas, gangrene and a host of lesser evils. Such minor discomforts as *acarus* and *pediculosis* were ever present. Many men now living remember when lying-in hospitals increased the dangers of childbirth, but few realize the real rôle of hospitals in the presanitary era.

The relative losses in battle and by disease in this period cannot in general be given; or at all except roughly in a few isolated instances. Statistics were then unknown. Every one who has read Pepy's Diary will remember what difficulty he, the principal accountant of the navy, had with his bookkeeping. The few medico-military writers, like Pringle and Munro, concerned themselves chiefly with observations on disease; they did not and could not record the losses. General historians in all ages have ignored diseases and the influence of the medical pro-

fession on civilization. For example, Motley, in his "Rise of the Dutch Republic," a work of three volumes dealing with thirty years of almost constant sanguinary warfare, never once alludes to an army surgeon or an army hospital. Some argue from this neglect that the ancient and medieval armies were harder and suffered less from disease than those of the present time, and had lower death rates. Such ideas are altogether erroneous. During the time of which we have reliable knowledge the mortality of armies has irregularly but surely decreased; and there is every reason to believe that death rates were never lower than at the beginning of the era of sanitation, little more than one hundred years ago. Soldiers before that time were less well cared for in every way, the death rate of the nations was twice what it is now, men were exposed to all the diseases now extant, and in addition to such deadly pestilences as plague, cholera, smallpox and typhus, now practically unknown in the armies of civilized nations. Not only was there vastly more sickness, but of the sick a much larger proportion died, from more deadly diseases and from lack of care, proper treatment, and especially lack of sanitary knowledge and management. Even the wounded died in large numbers as compared with the present; with poor surgery and little care, ordinarily one-fifth or more would die; but crowded into hospitals they contracted the most malignant infections and even dysentery and typhus, resulting in the death of one-half or even more of their number. To-day about five or six per cent. of the wounded die; then twenty, thirty, fifty or even more. The medical service at that time had become organized, it had secured hospitals both in the field and at bases of operations, but it had made little impress on the high mortality rates. Why? Because as yet it only attempted to care for the sick and wounded. It had not yet attempted to any extent, and had not the requisite knowledge, to prevent disease.

CAMPAIGN IN IRELAND, 1689.

During the war of King William and James in Ireland, the Duke of Schomberg landed at Bangor on August 13, 1689, with an army of 14,000 regular troops, including many regiments still in existence, as the Dragoon Guards and Inniskillings. This army took Carrickfergus and in September marched to Dundalk and went into camp there. Among the troops were many recruits, the camp was low and unhealthy, food and

clothing were scarce, surgeons few and hospitals lacking. Sickness of a malignant nature soon appeared and spread throughout the army, which had slight means of combating it. This failure was not due to the medical officers, but to Harbord, the army treasurer, who afterwards acknowledged his responsibility for the lack of hospitals, and stated that had he known as much at the beginning of the campaign as at the end he might have saved two-thirds of the men.

On account of sickness the army was unable to take the offensive and remained in the sickly camp. In October Schomberg, who was himself attacked, wrote the King that he had sent 1,000 sick to Dublin; but this only faintly represented the true state of affairs. In November the rains became incessant and the troops were obliged to break camp and go into winter quarters. At that time nearly the whole command was sick and when the army marched away it appeared to consist only of the sick and those in attendance upon them. Many were so low and apathetic that they did not desire to be moved; hundreds died straggling along the roads and on the boats, still more after reaching Belfast, where the sick were taken.

While we have no precise accounts of the losses during this campaign of entire failure, Story's account of the war gives some rough idea of the deaths from disease; the deaths occasioned by the enemy were negligible.

Died at Dundalk.....	1700
Died en route to Belfast.....	870
Died in hospitals at Belfast.....	3762
Total	6332
Survivors	7700

Some of the regiments, averaging from 700 to 800 men, had but 60 fit for duty. In a few months, with practically no fighting, almost one-half the army died from disease, and the remainder was totally unfit for the field. As Howell says, this terrible loss was directly due to the foolish mistake of sending into the field an army which had not been carefully prepared, trained and fitted out in time of peace for what it was called upon to do in time of war.

This, one of the most terrible examples of the destruction of an army of which there is a record, was yet productive of

ultimate good; for, as is often the case after a shipwreck or fire to-day, the horrible example spurred the authorities into an improvement of the medical service of the army. The marching hospital and fixed hospital of the British Army were first put on a proper basis by Royal Warrant of March, 1690.

CAMPAIGNS IN FLANDERS, 1742 TO 1748.

Sir John Pringle was one of the first to write on the diseases of armies; accompanying the British forces in the Netherlands, 1742-48, he wrote an account of his work there, with observations on the diseases seen, and gave incidentally some fragmentary statistics. Writing in 1768, he regretted that neither ancients nor moderns had written on the diseases of armies.

In 1742 the force in the Low Countries amounted to 14,000 men and the sick never exceeded 10 per cent. of the command; this was double the rate at home, but was not accounted an immoderate number. At Bruges during the autumn there was three times as much sickness as that mentioned, the fever was of a typhoid type and more in proportion died. These fevers with dysentery filled the hospitals, and now appeared that disease so much dreaded, hospital fever or typhus.

In 1743 the army marched up the Rhine as far as Hanau and on June 26th fought the battle of Dettingen. Soon afterwards dysentery was very prevalent in a malignant form, 1500 being sent away within a few days. In October the army returned to Flanders, leaving behind one-fourth its number sick with dysentery and fever. Of these about one-half died, or more than 10 per cent. of the army. Some idea of the malignancy of the fever may be learned from Pringle's statement that of fourteen hospital mates all but one or two were sick and five died; while the inhabitants of one village in which a hospital was located nearly all died.

In 1744 there was little sickness. Pringle says not to exceed 300 died in this campaign; a rate of 25 per 1000 per annum, which would be considered good to-day. In 1745, the year of Fontenoy, the season was dry and the army healthful; at the end of the campaign there were but 1000 sick, and 200 had died out of an army of 20,000. All these figures are estimates and doubtless too small.

In 1746 the greater part of the army was brought back to England on account of the Stuart rising known as The Forty-

five. Some 10,000 men marched into Scotland and in April fought the Battle of Culloden. During six months 2000 had been in hospital and 200 died of disease. This last figure is hardly credible, for in two regiments 97 were sick on landing, of whom 40 died.

In 1747 an army of 12,000 men took the field in Flanders and the Battle of Laffeld was fought in July. The troops were sickly and about one-half the men were down with fever and dysentery. During this time four battalions had been stationed on the islands of South Beveland and Walcheren. These corps were so sickly that at times not more than 100 men were fit for duty out of 700. The Royal Battalion had but four men not attacked. When these troops went into winter quarters 80 per cent. of them were sick; yet at the same time Commodore Mitchel's Squadron, lying between the islands, enjoyed perfect health. The proportion of deaths from disease cannot be given, but it all depended on fate and was unaffected by sanitary arrangements.

WALCHEREN EXPEDITION.

The classical example of the failure of a campaign and ruin of an army by disease is that of the British expedition against Antwerp in 1809. On August 1st of that year the Earl of Chatham landed on the low, flat and unhealthy island of Walcheren, in Zealand, with a Regular Army of approximately 42,000 men, well equipped and apparently as hopeful of success as the similar small army then operating on the Spanish Peninsula. It was said that this was the largest force which up to that time had ever been fitted out in England. Unfortunately no study had been made of the seat of operations, and there was insufficient sanitary preparation.

The landing was unopposed, and, after bombardment, Flushing was entered on August 15th. Hospitals were established in the ruined buildings of the place, and in the surrounding towns where the troops were quartered. All were unhealthful, the whole region being low and swampy, the water bad, and the very air pestilential. Sickness promptly appeared and spread with the alarming rapidity of a true plague. By August 25th. there were 5000 sick in the hospitals, and the disease was becoming so prevalent and widespread as to threaten the success of the undertaking, and even the existence of the army. A

council of war was held on the 27th and it was decided to abandon the capture of Antwerp, the prime object of the campaign, leave about 17,000 men to hold the island, and send the remainder with the sick back to England. The sick by this time numbered nearly one-fourth of the army; more than 500 had already died. The troops destined for England were embarked early in September and it was found that many more sick came to go than had been reported.

By September 10th only 16,000 men remained, but of these 7000 were already sick. The deaths in September amounted to 52 per 1000; in October the rate rose to 62, equivalent to an annual rate of 756 per 1000. These died or were sent home until by November 25th there were but 6749 remaining. It was finally decided to abandon the island, and on December 23d the last British soldier left the place. But the disease by no means ceased with the withdrawal. Some 2000 had died there; a vastly greater number died after reaching England. The disease continued and even spread. Many men not previously affected were seized and it continued through the winter and spring. By January 1st nearly 2000 more had died and the hospitals where these troops were stationed were filled with sick. Moreover, the regiments were so filled with weak and sickly men that during the next campaign in Spain they had much more sickness than regiments that had been so fortunate as to escape Walcheren. The total number of deaths was approximately 8,000, or 20 per cent. of the expeditionary force; of these but 106 were killed in battle and about 100 died of wounds. The money cost of this abortive campaign was twenty million pounds, on which the English people are still paying interest at the rate of two million dollars a year.

A plain speaking Scotchman, writing for the *Edinburgh Review*, said of this expedition: "The expedition to Walcheren, planned and conducted as it was, was the fruit of statistical ignorance in everyone from Prime Minister to Commander-in-Chief, and from him to the surgeon's mate. That ignorance any Dutchman could have dispelled." It would have been easy to learn from Sir John Pringle that of four battalions of British troops on this very island in 1747, within a few weeks four men out of five were sick. When the later expedition landed there were but 85 men alive of a Dutch regiment that had come to the island three years before. The average death rate of the inhabitants was 32 per 1000, and the French troops along the

Zealand coast had lost one-third their number by death each year. Napoleon was well acquainted with these details; when he learned of the landing of the expedition he said: "We are rejoiced to see that the English have packed themselves in the morasses of Zealand. Let them only be kept in check and the fevers peculiar to that country will soon destroy them."

That this tremendous loss of life was due to unsanitary conditions is proven, if proof were necessary, by the fact that there was no more than the usual sickness in the fleet lying off the coast. Sanitation on shipboard was in advance of that in the land forces. This fleet numbered 35 sail of the line and 22 frigates and other vessels, with 174 transports; all carrying more than 25,000 seamen and marines. Three cavalry regiments were not landed, but remained on the transports in the Scheldt and returned to England in September. These were unaffected by epidemics and had no more than the usual sickness. A cavalry regiment which was landed, the Ninth Light Dragoons, suffered more than any of the other 47 except only 4. Rarely in all history has ignorance and carelessness of sanitary rules led to such grievous and humiliating results as in the expedition to Zealand in 1809.

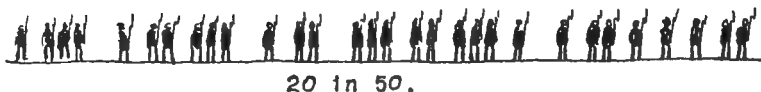
SAN DOMINGO, 1802.

Since armies to-day are compelled to campaign in tropical climates, and unfair comparisons are frequently made between the losses of such armies and those operating in cool and healthful latitudes, it will be useful to cite an example of the fate of an army in the tropics in the pre-sanitary era.

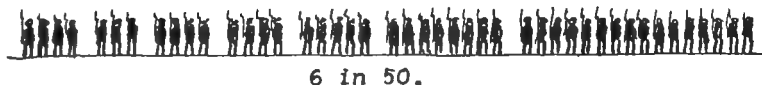
Napoleon, having decided on the conquest of San Domingo, despatched a force of 20,000 men under General LeClerc to that island in 1802. This force was made up of veterans and well commanded, but scarcely had it landed when yellow fever appeared and spread rapidly. The disease seems to have been even more fatal than usual, and this army was swept as if by such a pestilence as one reads of in legendary history. Officers and soldiers perished by hundreds and thousands; 5000 had died in a short time and 5000 more were sick. A reinforcement of 10,000 men arrived, but death was more rapid than the ships could carry them over from France. Thiers states that at least 15,000 perished. But 10,000 were left sound and these soon succumbed to a small British force sent against them. Of 30,000 excellent troops scarcely any ever returned to France.

LOSSES FROM DISEASE
IN VARIOUS WARS.

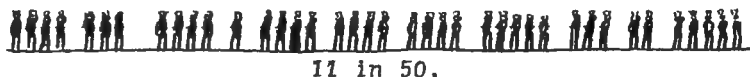
WALCHEREN EXPEDITION, 1809.



PENINSULAR WAR, 1811 - 1814.



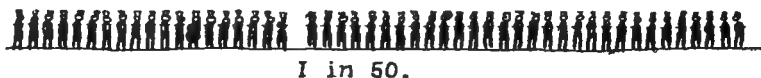
CRIMEAN WAR, 1854-56, ENGLISH.



AMERICAN CIVIL WAR 1861 - 65.



FRANCO-PRUSSIAN, SPANISH, BOER, AND RUSSO-
JAPANESE WARS.



THE SANITARY ERA.

In the preceding pages, dealing with the care of the sick and wounded, and the losses by battle and disease, the slight means utilized for mitigating the sufferings of war are painfully apparent. The terrible results of official neglect which darken the pages of the history of those earlier years stamp the people in general with indifference, if not brutal carelessness, concerning the fate of the victims of war. When this hardness began to give way to feelings of humanity, and men no longer looked on pestilence as the inevitable manifestation of the malevolence of nature, medical services were established in armies; services at first lacking sufficient surgeons and doctors, attendance, supplies, even food; and possessed of little or no influence or authority. Their object was solely humanitarian; the world had reached a stage of moral evolution where it could no longer look without feeling on the sick soldier dying in a ditch, or the maimed veteran begging from door to door. An aid to this evolution was the change in the soldier himself; from a hired mercenary to a patriotic defender of the State. The State then prepared means of succor for the victims of battle; but slowly learned that disease caused far more deaths than battle. Frederick the Great said fever alone cost him more men than seven great battles. Still later men began to see that disease was susceptible of prevention or at least of diminution, and that the sanitary service was a powerful weapon for that very purpose. Here was an entirely new view of the functions of that service.

Sir John Pringle had written on prevention in 1768 and made some efforts in that direction, but little was accomplished before the Napoleonic Wars. Those tremendous contests lasted so long that they served as great practical schools in which all branches of the art and science of war made remarkable progress. We find the officers of the British Army much concerned with sanitary affairs and making real progress. In the French Army knowledge of sanitation advanced, but there was little opportunity for its application; surgery and the handling of the wounded were more in evidence.

The first sanitary efforts were crude and frequently fruitless of results. It was not until nearly a hundred years later that the discoveries of modern bacteriology placed in the hands of sanitary officers adequate knowledge and the weapons with

which to successfully combat the infections and contagions which have heretofore caused the great mortality of field forces.

The birth of this idea of sanitary prevention of disease marks the great turning-point in the work and success of the sanitary services of armies. Instituted chiefly to care for the wounded, they had no appreciable influence on the mortality of campaigns; gradually becoming organized and fitted to care for the sick and wounded, they still had little effect on the death rate of armies; but with the dawn of the idea of preventing disease, and conserving the strength and vitality of the army, they took on for the first time a real importance, and became a vital part of the forces. The sanitary officer began to take rank with other staff officers. But he must prove his faith by works. Unless he could actually reduce the terrible death rate of disease in armies, and make camps less dangerous than battle, his claims would appear pretentious and his measures of no value.

NAPOLEONIC WARS.

These wars saw little sanitary progress in the French Army. Contrary to the general opinion, the Emperor Napoleon gave little or no attention to the sick and wounded. With his eye ever fixed on victory ahead he cast no disquieting glance on the wrecks that strewed the roads in his rear. The *elan* of the Grand Armée never occupied itself with what was left behind; *le blessé ou les malades était un embarras pour sa marche*. Abandonment of the wounded was the rule in his armies. Larrey and Percy introduced the flying ambulance, but it was seldom seen outside the Guard. The sick and wounded, when not abandoned, were stuffed in buildings of every sort and left to die. The army depended on charity as in the days before Louis XIII. Larrey, Percy, des Genettes and a few officers gained reputations, but for the mass of officers the imperial epoch was a bloody drama which they followed without even reflecting a little of its glory. They knew but the sepulchres of the Grande Armée, the frightful crowded and infected hospitals, reeking with blood and filth. A pamphlet of the restoration not unjustly termed these so-called hospitals the sepulchres of the army. But this neglect and disdain of sanitation and the sanitary service brought its own sure reward.

The Peninsular War has been often spoken of as a cancer which for years steadily gnawed at the vitals of France, con-

suming her armies, though scarcely a battle a year was fought. It has been estimated that 460,000 men perished in Spain and Portugal, of whom no more than 60,000 fell in battle.

For the Russian campaign of 1812 little preparation was made and no hospital was established from Wilna to Moscow. It would be mockery to call the buildings filled with wounded and sick hospitals, destitute as they were of every essential except shelter. Of 500,000 men who crossed the Dnieper in June scarce 20,000 recrossed in December. Some 60,000 fell before the enemy; 200,000 perished in other ways during the disastrous retreat from Moscow. This is hardly a fair charge against disease, for amid the snows of Russia famine and cold were captains of the men of death. Yet sickness was not lacking. All the convents and public buildings along the way were filled with sick, nearly all of whom died. Twenty thousand died in Wilna alone, and as many in Dantzic. The lack of adequate organization of the Intendance, including the sanitary service, may be blamed for this catastrophe, which well illustrates the Roman proverb, "*Saepius enim penuria quam pugna consumit exercitum.*"

In the campaign of 1813, after Leipsic, it was disease alone that dissipated the army; of a hundred thousand men who left Leipsic in October but a few fragmentary battalions followed the eagles across the Rhine in November. The army lay scattered amid the villages on the route from Germany; the men dying by thousands and spreading a pestilence among the inhabitants. Reliable observers say the retreat from Leipsic was no less ruinous than that from Moscow, although there was neither cold nor famine. The utter ruin of the army was the legitimate fruit of sanitary indifference and neglect of the sick and wounded.

The principal campaigns of the British Army were those of the Peninsula, 1808-11. From December, 1808 to June, 1811, Sir James McGrigor was at the head of the medical department of these armies. Gravely impressed by what he had seen in Walcheren he made determined and successful efforts to improve the sanitary condition of the army, and especially to avoid typhus in the hospitals. He also instituted accurate medical statistics, so that for the first time the relative losses from different causes might be known. This alone had a powerful effect on the improvement of the condition of the army. As we say to-day, he turned on the light.

During these two and a half years there were in all the hospitals 2699 deaths from wounds and 14,269 from disease. The death rates may be estimated at 42 per 1000 per annum killed or died of wounds, and 118 died from disease. Disease destroyed four times as many as the enemy. While McGrigor says typhus was little seen, typhoid and dysentery appear to have caused 11,000 of the 14,000 deaths from disease. The death rate in the army at home at that time was about 15 per 1000 per annum. The disease death rate of the French armies in Spain could not have been less than 150.

To the successful efforts of the medical officers in this war its great historian Napier bears witness:

"The extraordinary exertions of the medical officers may be said to have decided the day at Vittoria, for their exertions undoubtedly added a full division to the strength of Wellington's army; and without these 5000 men it is doubtful if his Lordship, with his unrivalled talent, could have carried the day."

Their efforts were still much more directed to cure than to prevention. It appears that about 14 per cent. of the wounded died, an excellent rate for that time. Of the sick no rate can be given but it was not above 10 per cent.

RUSSO-TURKISH WAR, 1828-29.

During this war, of 115,000 Russians who crossed the Pruth not more than 15,000 ever returned; the rest died of fevers, dysentery, plague and cholera. Sanitation had lagged behind in Russia and was unknown in Turkey; diseases now unseen in Europe prevailed and the sick died by thousands. More than one-fourth the fever patients died. Of 5500 entering the hospitals in August, 1829, 3959 died within the month and but 614 ultimately recovered. During the year the Russians lost at least 60,000 men by disease. Among the deaths were those of 54 surgeons. This terrible record is but typical of many, if not most campaigns, during the middle ages.

MEXICAN WAR, 1846-48.

During the Mexican War 100,454 men were sent to Mexico, serving on an average thirteen months. The total losses were 1549 killed, or died of wounds; 10,986 died of disease; total, 12,535. In addition 12,252 were discharged for disability.

The sick averaged from 17 to 27 per cent. of the army. In December, 1847, General Scott wrote: "The force at Chapultepec fit for duty is only 6000 rank and file; the number of sick, exclusive of officers, being 2041." The waste of life in this war was about as great as during the Napoleonic campaigns. The mortality from disease was 110 per 1000 per annum; the battle losses, 15. Seven times as many died of disease as at the hands of the enemy.

ITALIAN CAMPAIGN, 1859.

This campaign lasted but three months. The French force of 160,000 men fought two great battles in that time, making the battle losses appear unusually large. Two thousand five hundred and thirty-six were killed in battle and 2962 died of wounds, totaling 4498; while but 2040 died of disease; less than half as many as by battle. The rates per thousand per annum were, for battle, 112, and for disease, 51. Doubtless many died of disease during the following months but the troops were at once brought back to France and the losses afterwards not included. Of the wounded 17.3 per cent. died.

CRIMEAN WAR—ENGLISH, 1854-6.

No other war so well illustrates the effects of improved sanitary methods on the death rate of an army as that in the Crimea. This one campaign in itself epitomizes the changes wrought in the health of armies by the application of the lessons of a hundred years. When the British Army landed in Turkey and advanced to the Crimea, although in a very unhealthy country and subject to cholera in addition to all ordinary diseases, although without sufficient food, clothing or shelter, there was almost an entire absence of sanitary control of the camps. As could have been expected, the men sickened and died by thousands, almost as helplessly as the followers of the Crusades. The sanitary conditions were spoken of by all as frightful, and the death rolls justify the use of that adjective.

From April 10, 1854, to June 30, 1856, 82,901 British soldiers were sent to the Crimea, but during these twenty-six months the average strength was only 34,559. These furnished to all the hospitals 218,952 cases; of which 24,000 were

wounded and 194,000 were sick. There were 16,224 deaths from disease, 2755 were killed and 2019 died of wounds. The annual battle death rate was 69, the disease death rate reached the enormous figure of 230 per 1000 per annum, more than four times as great as the battle rate. In all, 300 men out of each 1000 perished each year.

The winter of 1854-5 was severe, and the suffering indescribable. At one time more men were in hospital than on duty. By January the death rate was 1142, a rate that if continued would have destroyed the army in ten and one-half months.

General Wolfe composed a song which was long a favorite in the British Army. The refrain ran:

"Why, Soldier, why
Should we be melancholy boys?
Why, Soldier, why,
Whose business 'tis to die?"

It would have been particularly appropriate at this time, when to die was indeed the principal business of the soldier; and not gloriously at the head of a storming column, as Wolfe fondly imagined, but miserably and to no good and in some wretched hospital.

But there is a brighter side to the picture. The nation learned of this suffering and death, the sanitary forces were reorganized and well supplied, clothed with authority and commanded to put an end to such conditions. By February the death rate had fallen to 860, in May to 190, by autumn to 50, and during the winter following it was but 16; far below the battle rate of 69. During the first winter 63 men of each 1000 died of disease; during the second but 3.4. It was like coming from the fifteenth century to the nineteenth in a few months.

Of the sick about 17 per cent. died; of the wounded 16 per cent.

CRIMEA, FRENCH ARMY.

Bad as was the sanitary condition of the British Army in the Crimea, that of the French was even worse. Affected with typhoid, typhus, scurvy, dysentery and cholera, divisions were reduced to fragments and regiments almost disappeared as in the days of Gustavus and Wallenstein. Cholera attacked a division at Varna and it disappeared as if in a whirlwind. Dur-

ing the first winter, of 47,800 men 18,000 died. Practically one-third of all the sick died, and in addition 21 per cent. were invalided. The scenes in the hospitals recalled the pictures of Boccaccio.

Although 315,000 men were sent out, the average strength was but 103,770. In the whole time 79,295 died of disease, or one out of every four sent out. The disease death rate reached the enormous figure of 341 per 1000 per year.

The battle losses were: killed, 7607; died of wounds, 8813; total, 16,320. The rate is 70, about one-fifth the disease rate. The general conditions may be judged by the fact that 1000 died following slight wounds; 830 following frostbites; and 4000 of scurvy. And the most discouraging thing of all is that there was but little progressive improvement during the war. While but 329 died of typhus during the first winter, 5689 died of that disease during the second. The death rate of the wounded is also suggestive. Twenty-five per cent. of these died, the majority not of their wounds, but of complications like pyemia, erysipelas and gangrene; or worse, of hospital diseases like typhoid and typhus.

The Russians could hardly have had more than 160,000 men. They had 24,731 killed and 15,820 died of wounds; total, 40,551. They lost 88,798 by disease. The rates are 120 and 263, and the proportion is 1:2.2. Of the wounded 19.47 died, of the sick 22.9 per cent. Russian writers, by placing their average strength at 400,000, make their death rates 45 and 98, manifestly too low. As the combined strength of the British and French forces were less than 140,000, theirs could not have been over 150,000.

AMERICAN CIVIL WAR, 1861-65.

During this war, lasting from April 15, 1861, to June 30, 1865, the average strength of the Union armies was 806,755 officers and men. The total number of deaths was 359,528 (Fox); 67,058 were killed in battle and 43,012 died of wounds; giving a total of 110,070 deaths from battle casualties; equivalent to a rate of 33 per 1000 per annum. The number dying of disease is estimated at 224,586, or 65 per 1000 per annum. These numbers are from the latest revised statistics and are all larger than those given in the M. and S. History of the War. The death rate from sickness, while it appears high, was actually

very creditable as compared with the rates of previous wars, usually waged by regular troops. While there was a great deal of sickness much of it was of a mild nature. Of 6,000,000 cases but 200,000 died, or 3.4 per cent. The death rate in the regular troops was 32; in the white volunteers, 55; and in the negro troops 133 per 1000 yearly. Of the wounded 14.6 per cent. died, which was the average rate at that time. About two-thirds as many men died of wounds as were killed in battle. Twice as many men died of disease as from battle wounds.

In addition to the deaths named there were 24,877 from accidents, injuries and unknown causes. More than 250,000 were discharged for disability and 200,000 deserted.

In the navy, out of an average strength of about 60,000, 1804 were killed or died of wounds and 2627 died of disease. The rates are 7.5 and 11, as compared with 30 and 60 in the army. The death rate from disease was no greater than in time of peace.

As to losses in the Confederate service, nothing but estimates can be given. Complete records never existed, and many of those made were destroyed near the end of the war. Dr. Joseph Jones of that army estimated some 200,000 deaths, of which he believed one-fourth were caused by wounds and three-fourths by disease. It is probable that one-third and two-thirds would be more nearly correct. The Provost Marshal in 1866 estimated the battle losses at 74,550. Since then Fox has made a very careful compilation of all reported losses and has fixed the battle loss at 94,000, a number that may be accepted.

The disease loss is even more a matter of conjecture, for there is almost no data from which to calculate. There is no good reason to think it was less than twice the battle loss. If so, the death rates of the Confederate armies were 47 per 1000 per annum lost in battle, and 94 lost by disease. Two deaths from disease to one by bullets may be taken as the ratio on both sides during this great war.

RUSSIAN WAR, 1877-78.

This war between Russia and Turkey lasted from April 24, 1877, to January 31, 1878, practically one year. The Russian writers place their average strength at 824,000 men, which appears much too high. It is evident that by placing the strength high the death rates will be lowered. They report that 15,567

men were killed in battle and 6824 died of wounds; total battle losses, 22,391; while 81,363 died of disease. This gives a battle loss rate of 25.8 and a disease death rate of 99 per 1000 per annum, calling the length of the war one year. About four times as many men died of disease as of wounds. Of the wounded 12 per cent. died; of the sick 6.6 per cent.

FRANCO-PRUSSIAN WAR, 1870-71, GERMAN.

This war was marked by most remarkable progress in military sanitation—in the German Army. The whole army was made up of regular troops, splendidly organized and equipped, and schooled in two preceding wars. The sanitary service was like all else, complete, and worked like part of a tremendous but efficient machine. And the results were even better than would have been expected. Its achievements compelled admiration, even from the French. A new record was made in the contest with disease, one not bettered in any great war since.

In this war, lasting from August 1, 1870, until March 1, 1871, the average strength of the German Army was 723,556 men; 17,572 were killed and 11,023 died of wounds; total, 28,595, equivalent to a rate of 55 per 1000 a year. But 12,174 died of disease, or 24.51 out of each 1000. One hundred years earlier as many died of disease in garrison. The peace death rate of the Prussian Army in 1869 was but 4.76. Eleven per cent. of the wounded died and five and eight-tenths per cent. of the sick. The ratio of battle losses to disease losses was 2.3 to 1.

FRENCH ARMY

The French sanitary results were as poor as the German were excellent. It is a fact not altogether explained that the French medical service, oldest in history and always best in theory, has ever been a failure in the field. The present case is not a fair example, for the army was always defeated, and generally driven from the field in rout, leaving the ambulance organizations in confusion, if not in the hands of the enemy. Yet they were poorly organized and equipped and could never compare with those of the Germans. In the second stage of the war, the stage of extemporized armies, the regular medical service seems to have abdicated the field in favor of the volunteer aid societies. The results were, if possible, worse than before. French writers ascribe their failure to the complete

subordination of the service to the Intendance. This domination was doubtless bad, but the service was rickety, as was the whole army.

Estimating the average strength of the army at 1,000,000 men, the deaths from battle casualties amount to about 67.5 per 1000 per annum; from disease, to 140.8. The latter rate may be compared with the rate of 24.5 in the German Army or with the rate of 65 in the American Army during the Civil War. The total number of deaths in the French armies was 138,871, but all French writers studiously avoid statistical details. The present writer estimates that 24,000 died in battle, 21,000 of wounds and 93,871 of disease and other causes. Of the wounded about 15 per cent. died; of the sick at least 25 per cent. The sieges and abandonment of the sick and wounded in the later campaigns account in part for these high mortality rates. When the total loss was announced a cry of rage and grief went up from all France, a cry that still reverberates, though faintly, throughout the land.

SPANISH-AMERICAN WAR, 1898.

The average strength of the American Army in this war was 211,350. Of these 862 were killed in battle and 106 died of wounds; 5438 died of disease. The ratio of battle loss to disease loss was 1 to 5.6. It should be remembered that but one small battle was fought and not more than one-tenth of the army ever saw a gun fired at the enemy. The rates, calculated by Sternberg for one year, are, for battle, 4.6 per 1000; for disease, 25.73. Of the wounded 4.6 per cent. died; of the sick 8.6 per cent. Typhoid alone caused 85 per cent. of all disease deaths. But for this one disease the death rate would not have been above the average for peace service.

ANGLO-BOER WAR, 1899-1901.

This war lasted 961 days, or about two and two-third years. The average strength of the British Army was 208,326 men; 5777 were killed in battle and 2018 died of wounds; total, 7791, giving a rate of 14 per 1000 per annum. Fourteen thousand two hundred and ten died of disease, equivalent to a yearly rate of 25.58 per 1000. Of the wounded 8.8 per cent. died; of the sick but 3 per cent. The number constantly sick amounted to

but 2.87 per cent. of the entire force. Typhoid caused 74 per cent. of all disease deaths, and with dysentery caused 87 per cent. These two diseases caused all deaths in excess of the usual peace rate. Twice as many died of disease as of wounds. The total deaths were 39 per 1000 each year, or less than 4 per cent.; but the entire wastage, including invalided, missing and prisoners, was 40 per cent. annually.

RUSSO-JAPANESE WAR, RUSSIAN.

This was lasted from February 9, 1904, to the signing of the treaty of peace, October 14, 1905. The data used is that of N. Kozlovski of the Russian General Staff, except that his average strength, 671,490, is too great and has been reduced to 540,000 officers and men. This number has been used as a basis of all calculations, and the length of the war has been placed at twenty months.

There were killed in battle, 25,331; died of wounds, 6127; total, 31,458, or 35 per 1000 per annum.

The deaths from disease amounted to 12,198, or 13.5 per 1000 per annum. This is the lowest disease death rate on record and is naturally under suspicion.

Of the 146,032 wounded, 6127, or 4.19 per cent. died.

Of the 358,077 sick, 12,128, or 2.7 per cent. died.

The proportion of killed to wounded was 1 to 5.7.

The ratio of battle casualties (K. & D.) to disease deaths was 2.6 to 1; 31,458 to 12,128.

There were 28,358 men discharged on account of wounds, or 31 per 1000 per annum.

There were 48,479 discharged on account of disease, or 53 per 1000 per annum.

The total discharges were 76,837, or 84 per 1000 yearly.

The total loss to the army from battle casualties (killed, died and discharged) was 65.4 per 1000 annually.

The total loss from disease (died and discharged) was 66.5, or practically the same as from battle.

The total loss from all causes is thus seen to be 131.9.

This supposes that the remaining sick and wounded recovered.

The disease death rate in the Russian home army at this time was 5.75, which may be compared with 13.5, the field rate.

The number constantly sick is given as 22.9 per 1000.

Typhoid and dysentery caused practically one-half the deaths from disease.

In the whole army 663 of each 1000 contracted disease and 22.4 died.

RUSSO-JAPANESE WAR, JAPANESE.

The losses of the Japanese during this war cannot be stated with certainty. The figures given out by the Japanese authorities seem to the writer even less dependable than those of the Russians. For the present they can only be presented, as doubtful evidence is presented to a jury.

The Japanese are estimated by Kozlovski to have had an average strength in the field of 650,000 officers and men. The killed in battle numbered 47,387, while 11,425 died of wounds; giving a total battle loss of 58,811 and a death rate of 54 per 1000 per annum.

The deaths from disease, as recently given out, and as stated by Kozlovski, were 27,142, making the disease death rate approximately 25 per 1000 per annum. The ratio of deaths in battle to deaths from disease was 2.16:1. This is an excellent record but no better than that of the Germans in 1870-1, considering ratios only; and no better than that of the British and Americans in their last wars, if the true ratio, the annual death rate per thousand, be considered.

Of the 173,425 wounded 11,425 died, or 6.58 per cent.

Of the 333,073 sick, 27,692 died, or 6.6 per cent.

Both these rates are high for the present time, and higher than the corresponding rates in the Russian Army. The proportion of killed to wounded was 1 to 3.6, a high rate.

Surgeon Kipke in 1905 estimated that 90 per cent. of the sick returned to duty and 93 per cent. of the wounded.

The Japanese report that in the navy, with a strength of about 15,000 men, 496 were killed in battle, 1,445 were drowned, and 1,791 wounded, of whom 117 died. If, as seems proper, we include the drowned in the battle losses, they amount to 90 per 1000 per annum, as compared with 54 in the army.

CONCLUSION.

What of the future? Have the evolution of medical organization and the reduction of disease in armies reached their limits? No. New medical discoveries, more successful application of sanitary science and a more widespread diffusion of the

knowledge of the laws of health among the people promise still greater achievements. If American medical men during the Civil War, working largely in the dark, were able to reduce the death rate from 110 to 65; if again in 1898 they reduced it from 65 to 25; if the Japanese, mere imitators, equaled this record, surely a lower record will yet be reached.

The annual death rate of armies in time of peace is now from 3 to 4 per 1000. The German rate, less than 3, appears to be a minimum under present conditions. Until some Metschnikoff succeeds in arresting the stealing steps of age, or some Carrel discovers the long sought fountain of youth, this rate cannot be much improved. When the peace death rate of armies was 20 the war rate often rose to 100, 200 or even more. When, about 1870-1880, the peace rate fell to 5, the war rate fell to 25. The disease death rate of all recent wars, except the Russian war of 1877-78, has not exceeded 25. The war rate is still five times the peace rate.

An investigation of the data proves this increase to be largely due to infectious diseases. As long ago as 1743 Pringle blamed fever and dysentery for most of his fatal sickness. McGrigor in 1811-14 accredited two-thirds of the deaths in Wellington's army to these causes. In the Crimea, of 230 deaths per 1000 in the British Army, 210 were due to typhoid, dysentery, cholera and other infectious diseases. In the American Civil War practically three-fourths of the deaths were due to these infections; that is, to diseases now preventible. In later wars dysentery has not been as frequent a cause of death. The true plague, smallpox, cholera, typhus, hospital gangrene and wound infections have practically disappeared from civilized armies. The principal death factor in recent wars in the temperate zone has been one single disease—typhoid. In the Boer War 76 per cent of all deaths from disease were caused by typhoid. In the Spanish-American War 85 per cent. were due to this one disease. But for typhoid the death rate in these two wars would have been very little greater than in time of peace. This, the most important of all diseases of armies in the temperate zone, now appears to be on the verge of annihilation.

But I would not infer that the disease mortality of armies will soon be no greater in war than in peace. There will always be exhaustion, exposure to the elements, lack of proper food and clothing, crowding and other inevitable accompaniments of war, which will necessarily increase the sick and death rate.

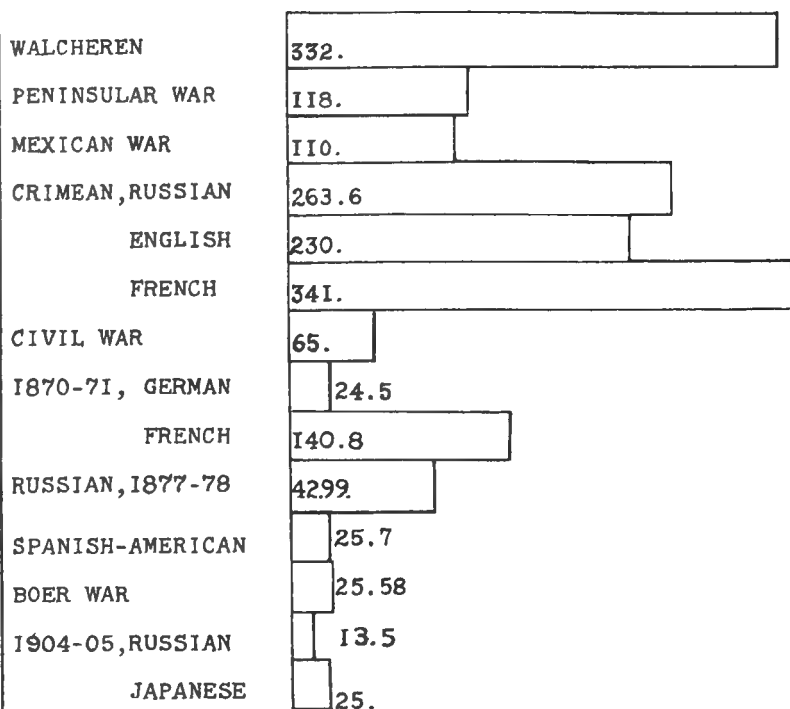
It is not, however, unreasonable to expect that the peace rate will be no more than doubled, or under bad conditions trebled. During the year 1901 the United States had an army of 65,000 men in the field in the tropics with a disease death rate of but 11.55 per 1000. The Russians claim a similar low rate for their recent war. We may expect that in future wars the death rate from disease will be no more than 10 to 15 per 1000 annually, and with favorable conditions still less. A rate of 10 per 1000 would be less than the battle losses in any important war. And furthermore, while a loss of 10 or 15 per cent. of the strength of an army weakens it perceptibly, the loss of 1 per cent. in a year is negligible. It is manifest that a regular standing army, with every department organized and equipped in advance, will have an immense advantage over an army in which nine-tenths of the officers and men, and medical officers as well, are inexperienced volunteers.

It may be confidently predicted that the disease death rate of troops in campaign will, under reasonably favorable conditions, be reduced to about 1 per cent. annually, or 10 per 1000, which is a negligible quantity. The death rate for the wounded can be reduced little more. The future ratio of deaths from battle and disease will show that the application of medical and sanitary science in the armies of the world has eliminated disease as an important factor in dissipating the strength of armies, and has relieved the barbarity of war by reducing to an absolute minimum what has, until the present time, been the greatest cause of suffering and death.

LOSSES BY BATTLE IN WAR.

WALCHEREN	16.
PENINSULAR WAR	42.
MEXICAN WAR	15.
CRIMEA, RUSSIAN	120.
ENGLISH	70.
FRENCH	70.
CIVIL WAR	24.
1870-1, GERMAN	55.
FRENCH	67.5
RUSSIAN, 1877-8	25.8
SPANISH-AMERICAN	4.6
BOER WAR	12.5
1904-5, RUSSIAN	34.4
JAPANESE	54.

LOSSES BY DISEASE IN WAR.



War	Battle Death Rate	Disease Rate	Ratio	Mortality	
				Wounds	Sick
				%	%
Irish, 1689.....	....	450	....	....	50
Walcheren Expedition, 1809.....	5	200	1.40	....	50
San Domingo, 1802.....	....	500	....	....	50
Peninsular War, 1808-14, Br.....	42	118	1.3	10	14
Russo-Turk, 1828-9, Russian.....	....	500	....	....	25
Mexican, 1846-8, American.....	15	110	1.7	12	....
Italian, 1859, French.....	112	51	2.1	17.3	....
Crimea War, 1854-6, English.....	69	230	1.3	16	17
French.....	70	341	1.5	25	33
Russian.....	120	263	1.2.2	19	23
American Civil War, 1861-5.....	33	65	1.2	14.6	3
Confederate, estimated.....	47	94	1.2	....	....
Russian War, 1877-8, Russian.....	25.8	99	1.4	12	6.6
Spanish War, 1898, American.....	4.6	25.7	1.5.6	4.6	8.6
Franco-Prussian, 1870, German.....	55	24.5	2.1	11	5.8
French.....	67.5	140	1.2	15	25
Anglo-Boer, 1899-1901, English.....	12.5	25.5	1.2	8.8	3
Russo-Japanese, 1904-5, Russian.....	35	13.5	2.6.1	4.19	2.7
Japanese.....	54	25	2.1	6.6	6.6

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